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The Diffusion of the Reggio Emilia Approach Among Early Childhood Teacher Educators in South Carolina

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DIFFUSION OF THE REGGIO EMILIA APPROACH AMONG EARLY CHILDHOOD TEACHER EDUCATORS IN SOUTH CAROLINA

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ABSTRACT

Growing numbers of U.S. educators are traveling to the northern Italian town of Reggio Emilia to study the innovative, arts-based approach to early education developed in the town's municipal infant-toddler and pre-primary programs now commonly referred to as the Reggio Emilia Approach. And though there is no way of knowing exactly how many educators and early childhood programs across the U.S. are currently making use of the approach, increasing numbers of U.S. colleges and universities are including the approach in both their ECE teacher preparation as well as campus child development programs, suggesting the Reggio Emilia Approach (REA) is diffusing into mainstream American early education.

A concurrent mixed methods study was used to examine and describe the diffusion of REA among early childhood teacher educators in one southern state relatively late in including the approach in its ECE teacher preparation programs. Data was collected using a Web-based survey and semi-structured interviews and was framed in Rogers' (2003) model of Diffusion of Innovation's theory. Fifty-one early childhood teacher educators in 2- and 4-year post-secondary institutions in the state participated in the survey and eight educators provided interviews.

Adopter distribution frequencies showed a slow but increasing rate of implementation or adoption of the approach in the state's ECE professional preparation programs in both 2- and 4-year institutions, with almost all (90%) survey participants reporting they had knowledge of the approach and about 60% of participants reporting they adopted REA or provided explicit instruction about the principles and practices of

REA in their ECE courses. REA was predominantly described as a curriculum model, included in ECE curriculum courses, and presented to students through formal lectures, textbook reading assignments, and class discussions. Qualitative findings showed participants who stated they were nonadopters or did not did not implement REA in their courses, included at least some information about REA in their courses even though nonadopters also reported having the least amount of knowledge about the approach, suggesting some prospective early childhood educators may be getting little or misinformation about REA in their teacher preparation programs.

Further, chi-square tests of independence showed two professional development experiences, namely attending conferences about REA and taking tours of REA programs, were each significant in influencing participants' decisions to adopt the approach for use in their work. Also investigated were participants' perceptions of the approach as suggested by diffusion of innovations theory (Rogers, 2003). Participants perceived potential advantages as well as high costs were associated with implementing the approach in both teacher education and early education programs. They also perceived REA as highly incompatible with the current structure and direction of education in the state and that the approach was complex, difficult to understand, and difficult to observe because too few REA programs exist in the state.

DEDICATION

I dedicated this work first and foremost to my Lord and Savior, Jesus Christ, who redeemed me and gave my life purpose and an eternal focus (II Corinthians 3:5). And to my husband, Marty, and our children, Jake and Emma, who made the journey, every step of it, with me. Thank you for all for the sacrifices you made for me and for your patience through this process. I love you more than words can say.

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CHAPTER ONE

INTRODUCTION

Background of the Study

According to the National Association for the Education of Young Children (NAEYC), rapid and "profound" changes are occurring in the field of early childhood education (NAEYC, 2001, p.1). Shifts in family and workforce patterns and changes in the demographic make-up of the United States are creating pressing demands for quality programs for young children and for a well-qualified early childhood workforce (Early & Winton, 2001). In addition, recent reform policies are changing the learning goals being set for young children with greater emphasis being placed upon academic achievement in the early childhood years. According to the NAEYC, these changes are shaping the direction of early childhood teacher and caregiver preparation programs in the United States and thrusting new responsibilities upon early childhood professionals (Bowman, Donovan & Burns, 2000; McCarthy, Cruz, & Ratcliff, 1999).

In light of these recent changes, national reports are suggesting early childhood educators may not be adequately prepared in their higher education programs to manage the challenges currently facing the field (American Association of Colleges for Teacher Education, Focus Council on Early Childhood Education, 2004; Early & Winton, 2001). A number of experts in teacher education have argued an urgent need to reform early childhood teacher education (Darling-Hammond & Bransford, 2005;

Cochran-Smith, 2005; Whitebook, 2003), and are encouraging states to raise licensure and qualification requirements for early childhood educators.

Shifts along theoretical and philosophical lines occurring are also causing changes in the field. Goffin (1996), Lubek (1996), Walsh (2005), and other contemporary scholars argue the need to re-evaluate conventional interpretations of child development and pedagogy in terms of universal norms and ages-and-stages-theory (New, 2000; Walsh, 2005). Postmodern reconceptualists in early childhood education also advocate the need for new theories that focus on the elimination of inequitable practices and pedagogy and effectuate social change (Genishi, Ryan, Ochsner, & Malter, 2001; Yelland & Kilderry, 2005). Edwards (2005) observed tensions in the field between the pedagogical framework of *developmentally appropriate practices* (Bredekamp, 1987), and the new and emerging paradigms based upon social constructivism and the "pedagogical work conducted by educators in infant-toddler and preschool centers in Reggio Emilia, Italy" (p. 68).

The infant-toddler and preprimary centers of Reggio Emilia, Italy, have been recognized as among the world's finest systems of publicly supported early care and education and as a distinctive and innovative approach to teaching and learning in the early childhood years (Edwards, Gandini, & Foreman, 1993; Corsaro & Molinari, 2005). The Reggio Emilia approach (REA) is a tightly interwoven set of philosophical and pedagogical assumptions about the construction of knowledge and curriculum, school design and organization, and the role of teachers, parents, and communities in young children's education (Gandini, 1993). It is mainly a philosophical and theoretical framework rather than a prescriptive set of practices, which draws from the

works of many European and American theorists, scholars, and educators, including Dewey, Gardner, Piaget, Vygotsky, among others (Edwards, Gandini & Foreman, 1993). Some of the key features of REA are described below and are also set out in Chapter Two.

1. **The image of the child:** The Reggio Emilia approach builds from the view that young children are powerful and capable learners who are more than receptors of information. Teachers who ascribe to REA maintain that children are protagonists in their own development, and therefore capable of collaborating and communicating jointly with adults and the environment in order to construct and express their own knowledge and understanding of the world. The high quality work done by children in REA has challenged previous ideas about what young children are capable of accomplishing and brought new attention to both the processes as well as the products of children's learning (Raines, 1997).
2. **The rights of children and families:** REA purports that young children have rights rather than needs. As Hendrick (1997) explained, REA advocates that "children have the right to the best societies can offer" (p. 17), including "the right to high-quality care and education that support the development of their potentials" (Hendrick, 1997, p. 17). REA also describes the role of teachers and parents in terms of rights, e.g., the "rights of parents to be involved with the school and the rights of teachers to grow professionally" (Hendrick, 1997, p. 17).

3. **The many languages of children:** In REA, children's ideas can be expressed directly or symbolically, using a variety of materials and media, as well as through song and movement. Adults in REA schools (teachers, artists and others) are important models for children, showing them how to use various tools and media to express, revisit, and revise ideas. Malaguzzi suggested children had 100 different languages or ways to express their knowledge and understanding of the world and adults had 100 different ways to listen (Edwards, Gandini, & Foreman, 1993; Hendrick, 1997).
4. **Documentation:** Documentation is the "transcriptions of children's remarks and discussions and photographs of their activity, and representations of their thinking and learning using many media" (Hendrick, 1997, p. 21). It serves a point of reference for engaging children in dialogue about their own ideas and provides opportunities for children to reflect over their own work (Edwards, Gandini, & Foreman, 1993; Jaruszewicz, 1994; Katz, 1994). Documentation is more than a record of children's work or a way to assess learning. Document as described in REA is also a stimulus for provoking continued learning, a tool for revising ideas, for planning and researching, and rethinking. It is a tool for teachers' professional development as teachers use documentation to reflect over their own successes in uncovering children's thinking. It is also a way of communicating with parents and the community about children's learning (Edwards, Gandini, & Forman, 1993).

5. **The role of the environment:** The layout and design of the physical space for children is an important feature of REA. The environment is considered a third teacher that can be used to provoke learning and foster interaction, communication, and relationships among children, parents, and staff (Gandini, 1993). In REA schools, the physical space is beautiful. It makes use of large windows to let in much natural light, plants, and carefully arranged and attractive materials. It is also filled with images of children's work, which is thoughtfully displayed around the school (Hendrick, 1997). Malaguzzi believed it was important that REA schools be amiable, meaning they should be welcoming, comfortable, and reflect the lives and personalities of the school staff, children, families, and community (Gandini, 2002; Malaguzzi, 1993a).
6. **The role of the teacher:** Teachers are more than technicians delivering prepared lessons from packaged curriculum. Rather, REA teachers consider themselves co-creators and co-researchers who join with children, parents, and other staff to help children in researching projects. An especially important role of the REA teacher is that of partner with parents in children's education. Teachers are seen as important nurturers and guides in children's lives along with parents (Hendrick, 1997). At the heart of the curriculum are the interactions and relationships between and among teachers, children, and parents. The three form a very important and dynamic learning triad. Teachers also have the important duty of carefully observing and dialoguing with children in order to better uncover their

understanding as well as new possibilities for learning and growth. Teachers document children's work in various ways—photographing, dictating, and displaying children's work--and they share this documentation with the children, parents, and the community. Documentation also allows teachers to gain perspective and feedback from others regarding their own work and progress as teachers (Hendrick, 1997).

7. **The role of the visual arts, atelierista, and atelier:** Particular to REA is the inclusion of an *atelierista* or a "teacher trained in the visual arts who works closely with the other teachers and children in every preprimary school" (Hendrick, 1997, p. 21), and the *atelier*, or artist's studio. In the studio, children are provided with a variety of materials with which to conduct their research projects, including various art tools, media, books, and other resources, photographs, and artifacts from previous projects. Throughout a project, children visit the atelier and work with the atelierista to learn about how to use tools and materials and to test their ideas using these tools and media (Gandini, 2002).
8. **The role of parents:** Parents are considered equal partners in children's education. They serve on school advisory committees and help guide school decisions. They are consulted for help with children's project work and participate in various school activities (Gandini, 2002). Their attendance is expected at parent-teacher meetings and at special events at schools. Parents are also expected help in classrooms, accompany classes on excursions, and help with classroom celebrations (Hendrick, 1997).

9. **Emergent curriculum:** The REA curriculum is not prescribed or established in advance, but takes the form of emerging projects that develop as teachers observe and document children's play, work with materials, questions, problems, and curiosities. Teachers provoke children's thinking about project topics by introducing materials and continual questions. Teacher planning remains open-ended and flexible in order to follow children's directions and interests throughout project work. There are no time limits placed on project work, and project can last days, weeks, or even months (Gandini, 1993; Jaruszewicz, 1994; Hendrick, 1997). Projects, daily routines, and activities constitute the framework for learning in REA schools, which has been termed as "emergent curriculum" in that "the curriculum emerges in the process of each activity or project and is flexibly adjusted accordingly through continuous dialogue among teachers and with children" (Hendrick, 1997, p. 22).
10. **The value of interactions and relationships:** REA builds from the learning theories of constructivism and social constructivism, recognizing that knowledge is dynamically constructed by individuals through interactions with others and the environment rather than simply transmitted from teacher to learner. Communication, interactions and relationships are, therefore, considered keys to building knowledge in REA classrooms (Hendrick, 1997; Hewett, 2001). Malaguzzi argued that REA's vision of group learning moved beyond Piaget's emphasis on knowledge as generating from within children (Malaguzzi, 1993b). Malaguzzi believed

> children grew knowledge as a result of joint negotiations, which developed from strong relationships formed with other children and adults. Children in REA programs, therefore, are grouped in homogenous or same-age classrooms of about 25 children per class, with two teachers working in each classroom. REA suggests small, homogeneous groups allow for greater interactions among children and "provide for greater possibilities for communication among children in planning and decision making (Hendrick, 1997, p. 19). REA also emphasizes the building of strong relationships among teachers, children, families, and communities (Malaguzzi, 1993b; Rinaldi, 2006). Therefore, children and teachers stay together for a period of three years, from about four-months of age (when children can begin attending infant-toddler programs) to three years, and then from three years to six years of age. When children outgrow certain spaces, the entire class, children and teachers, move together to new classrooms (Hendrick, 1997, p. 19).

Many elements of REA are quite complex and do not translate well outside the context of Northern Italy. The use of projects and emergent curriculum, for example, are multifaceted and complex strategies that intertwined other key principles and practices of REA, such as a high regard for developing relationships and fostering social interaction, and the use of symbolic representations and documentation. Some of the theoretical and philosophical underpinnings of REA are also difficult to understand as they run counter to more established theories about learning and development. REA's sociopolitical framework and emphasis on collectivism and the

rights of children and families may also hinder REA's diffusion, particularly in the U.S. where capitalism and individualism are strongly valued (Firlick, 1996).

Despite or because of these differences, Cadwell (1997) observed that over the past ten years "there has been a tremendous groundswell of interest in the Reggio Emilia approach among U.S. early childhood educators" (p.2), and growing numbers of child development and preschool programs across the country utilizing the approach (Goffin & Wilson, 2001). However, there are questions about the compatibility of REA with the current vision of ECE in the United States, particularly in light of standards-based reform initiatives in P-12 and higher education (Katz, 1994). There are also questions concerning U.S. educators' abilities to fully understand the theories and philosophies underpinning REA (Firlik, 1996; Cadwell, 1997; New, 2000; Gandini, 2004a). Linn (2001) suggested American educators may have only a romanticized notion of the approach, making it difficult for REA to disseminate in an authentic way in the United States. It is unclear how REA is shaping the direction of early childhood education, particularly in early childhood teacher education in the United States and in areas of the country where sociopolitical values are less compatible with the values underpinning REA. South Carolina may be one such context.

Despite or because of these differences, Cadwell (1997) observed that over the past ten years "there has been a tremendous groundswell of interest in the Reggio Emilia approach among U.S. early childhood educators" (p.2). There are growing numbers of child development and preschool programs across the country utilizing the approach (Goffin & Wilson, 2001). However, there are questions about the

compatibility of REA with the current vision of ECE in the United States, particularly in light of growing pressures from standards-based reform initiatives in P-12 and higher education (Katz, 1994). There are also concerns that U.S. educators may modify the approach without fully understand the underpinning theories and philosophical assumptions (Firlik, 1996; Cadwell, 1997; New, 2000; Gandini, 2004a). Linn (2001) also suggested American educators may have only a romanticized notion of the approach, making it more difficult for REA to disseminate in the United States.

It is unclear how REA is shaping the direction of early childhood education, particularly in early childhood teacher education in the United States and in areas of the country where the sociopolitical values are less compatible with the values underpinning REA. South Carolina is one such context. The sociopolitical context of South Carolina and its geographic location in the conservative "Bible Belt" region of the United States may make it unreceptive to the philosophical and ideological underpinning of REA which challenge traditional ideas and practices in early childhood education (Gallagher, Clayton, & Heinemeier, 2001). However, the state also faces a number of persistent economic and educational challenges that has brought renewed attention on the importance and need for high quality early care and education in the state.

According to the 2006 *South Carolina Kids Count* report, South Carolina ranks well below most other states on a number of wellness indicators, with high numbers of children living in single-parent families, born to teen mothers, and growing up in poverty (Annie E. Casey Foundation, 2006). The state also has one of lowest graduation rates in the nation, with a record low of about 63% reported in 2003

(Greene & Winters, 2005). Further, almost 30% of South Carolina's kindergarten students were assessed by their teachers as not ready for first grade at the end of the school year for 2004-2005. The state has made gains in establishing public, four-year-old programs, but it continues to struggle to provide enough quality and affordable programs to meet the needs of its poorest children and families. A recent court ruling by Circuit Court Judge Thomas W. Cooper in the case of *Abbeville County School District, et al., v. The State of South Carolina, et al.,* 93-CP-31-0169, found the state has failed to provide enough early education programs, particularly for children in poverty. Judge Cooper asserted, "Effective pre-kindergarten programs and four-year-old kindergarten programs are non-existent to the masses....Moreover, early childhood intervention from pre-kindergarten to grade three has not received the priority needed to be an effective force in minimizing the impact of poverty on educational abilities and achievement throughout the educational process" (3rd Judicial Circuit Slip Opinion, 2005, p. 166).

Statement of the Problem

REA has been acclaimed as an exemplary model of quality early care and education and as an innovation that holds possibilities for re-energizing the work of early childhood educators (Fu, 2002a; Hendrick, 1997; New, 2000). However, there are few ECE programs utilizing the approach in South Carolina, and it is unknown if ECE professionals in the state know about or use REA or elements of it in their work, or if REA is included in ECE professional preparation programs in the state's institutions of higher learning.

Purpose of the Study

The purpose of this study was to explore and describe the diffusion of REA among early childhood teacher educators in South Carolina. A concurrent, transformative mixed methods approach was utilized and data collected with a digital survey and semi-structured interviews. The study was framed in Rogers' (2003) diffusion of innovations theory, which is considered a classic change model that has broad applications for investigating a variety of innovations across numerous disciplines (Ellsworth, 2000). The predominant strategy of the study focused on reporting quantitative data collected through a Web-based survey. Qualitative data was collected concurrently using open-text response items embedded in the survey and through semi-structured interviews conducted with a small sample of survey participants representing different types of institutions across the state of South Carolina. The qualitative data served to inform and triangulate the quantitative findings. Roger's (2003) diffusion of innovations theory was used to develop the survey instrument as well as the interview protocol and to analyze and interpret the data.

Diffusion of innovations theory (Rogers, 1995, 2003) provided a well-established framework for investigating the dissemination of REA (Ellsworth, 2000). Rogers' (2003) model of diffusion of innovations theory is based on numerous studies conducted across many fields, including sociology, agriculture, business, communication, medicine, public health, and education, among others, and has been helpful in explaining, predicting, and identifying factors that influence the diffusion process and for identifying the key pathways innovations take through organizations.

Ellsworth (2000) stated that diffusion theory has been used to identify the characteristics of both innovations and innovators that are significant in the diffusing of new ideas.

According to Rogers (2003), an innovation is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12), and diffusion is "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 5). Four key components or variables appear in all diffusion studies: (1) the attributes of an innovation as perceived by individuals or other units of adoption; (2) the communication channels through which an innovation travels; (3) the time it takes for an innovation to diffuse through a system and for individuals to learn about, decide on, and adopt or reject an innovation; and (4) the structure, norms, and homogeneity of members of the social system through which the innovation diffuses (Rogers, 2003, p. 6). To better explain the process of diffusion, Rogers (2003) developed a model that depicts diffusion as occurring in five stages, which he labeled the innovation-decision process (Figure 1).

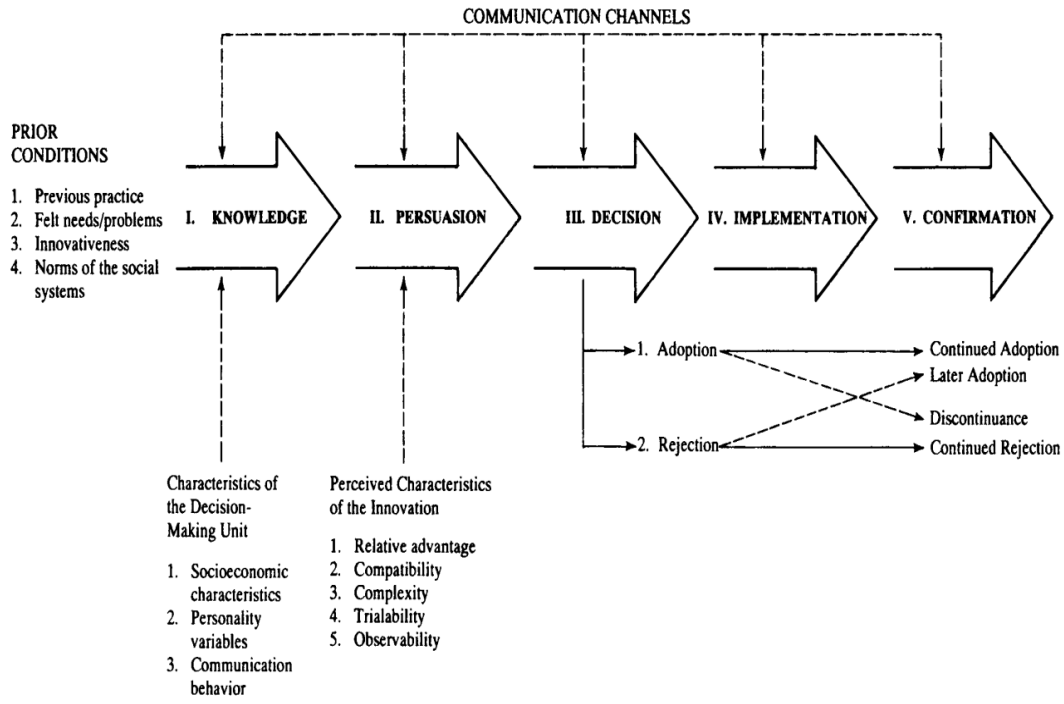

Figure 1. Model of the Innovation-Decision Process[a]

[a]Reprinted with the permission of Free Press, a division of Simon & Schuster, Inc., from *Diffusion of Innovations (5th ed.*), (p. 170), by Everett M. Rogers. Copyright ©1995/ 2003 by Everett M. Rogers. All rights reserved.

The innovation-decision process represents the information-seeking behaviors and decisions individuals make as they move from gaining first knowledge of the innovation, to forming an attitude about it, to making a decision to adopt or reject the innovation, to implementing the new idea, and finally, to confirming their decision to adopt (Rogers, 2003). Although the model suggests the process is linear, individuals can remain in any of the five stages without moving forward and can change their minds and alter their decisions anywhere along the way. Thus, rejection can occur anytime in the process, although discontinuance, which is a form of

rejection, occurs only after implementation. Further, the diffusion process ends when a decision to reject occurs or, after implementation, an innovation becomes part of an individual's standardized practices so that it is no longer considered an innovation. Also shown in the model are the prior conditions that play a role in influencing the initiation of the decision process. Rogers' (2003) explained that an individual's prior attitudes, felt needs, dispositions toward innovativeness, and the norms of the social system can all influence a person's openness to learning about new ideas.

Also important to predicting the rate of adoption or how quickly or slowly an innovation moves through a social system, are an individuals' perceptions of the attributes of an innovation. Rogers (2003) identified five key attributes found to influence the rate of adoption of a new idea, namely: (1) the relative advantage of the innovation; (2) the compatibility of the innovation; (3) the complexity of the innovation; (4) the trialability of the innovation, and (5) the observability of the innovation. Rogers (2003) noted, "Relative advantage and compatibility are particularly important in explaining an innovation's rate of adoption" (p. 17).

In addition, diffusion involves communication channels through which innovations are spread. Evidence from diffusion studies suggests that both mass media and interpersonal networks are important means of spreading new information and diffusing new ideas (Coleman, Katz, & Mendel, 1966 as cited in Rogers, 2003). Clearly, Rogers' (2003) theory provides researchers with multiple avenues for exploring and describing the diffusion of an innovation.

Research Questions

The three main questions and six subquestions guided this research study. The questions were:

1. To what extent is REA diffusing among ECE teacher educators in SC?
    a. What do ECE teacher educators in SC know about the innovation REA?
    b. How do ECE teacher educators in SC first come to learn about REA?
    c. What professional development activities about REA have ECE teacher educators in South Carolina participated in?
    d. How do ECE teacher educators' perceive the attributes of REA in light of Rogers' (2003) diffusion of innovations theory (i.e., relative advantage, trialability, complexity, compatibility, and observability)?
2. How do ECE teacher educators use REA in their work in teacher/caregiver education programs in South Carolina?
    a. What reasons do teacher educators in SC give for using, rejecting, or discontinuing their use of REA in their work?
    b. What elements of REA do ECE teacher educators report a as being relevant or irrelevant to their work?
3. Are there relationships between characteristics of ECE teacher educators (type of employing institution, professional activities,

years of teaching experience, highest level of education, age, racial identity, and annual income) and the extent to which they adopt REA?

Significance of the Study

A study into the diffusion of REA as an innovation can shed light on the changes that are occurring in the field of early childhood education and describe the direction in which early childhood teacher/caregiver preparation programs in South Carolina are heading. Findings from this study may also help address long-standing questions about the diffusion and applicability of REA in the U.S. (Katz, 1994; New, 1999; Cadwell, 2003). Further, in this current era of reform in education, teacher educators are recognized as important leaders in the process of change (Fullan & Hargreaves, 1996; Darling-Hammond & Bransford, 2005;); however, there is little in the literature describing the knowledge, professional development activities, or practices of ECE teacher educators and few details about the "content, format, and quality of specialized early childhood training" (Whitebook, 2003, p. 16). Therefore, a study into approaches and content differences between four-year and two-year ECE professional preparation programs can help shed light on ECE teacher education in the U.S. Findings may also provide baseline information useful in studying and tracking the presence of REA in ECE professional preparation programs in the South Carolina and similar contexts, as well as point out areas of need in teacher training.

Delimitations and Limitations of the Study

For purposes of this study, early childhood teacher educators were defined as those teacher educators teaching early childhood education courses or courses included in ECE teacher/caregiver preparation programs in institutions of higher learning in South Carolina. Only institutions offering graduate, bachelor's, or associate's degrees or certificates of completion in early childhood education, child care, or other related fields, were included in the study. The population was further delimited to only those ECE teacher educators who were listed as education faculty with email contact information posted in faculty directories on their institutions' websites.

A digital survey was chosen as the main data collection tool as digital surveys are quick, convenient, and typically less costly than paper and pencil surveys (Dillman, 2007). And because the target population of early childhood educators in South Carolina is small (less than two hundred) and reasonably identifiable, and because response rates to surveys have been declining in recent years (Porter, 2004 a), this study attempted a census rather than a random sample of early childhood teacher educators with published email addresses. Thomas (2004) recommended that when a target audience is less than 200, "it is best to include the entire group." (p. 89). And though the use of a census rather than a random-sample was reasonable, the study's findings and conclusions cannot be generalized to other populations.

A database was created containing the names and email addresses of all early childhood teacher educators working in South Carolina colleges/universities that offer ECE teacher preparation and related programs, and 116 teacher educators were

invited to participate in this survey study. 51 surveys were completed by eligible respondents, resulting in a 44% response rate.

A response rate of 44% increased the likelihood data was unrepresentative of the entire population. Porter (2004 a) found that, although the demand for survey research has increased in recent years, response rates have been steadily declining, resulting in increased response error. Self-selection error may have also influenced this study's response rate in that the focus of the inquiry, the Reggio Emilia Approach, may have appealed to only a segment of the responding population.

Experts in survey research, such as Babbie (1990), Porter (2002 b), Fink (2003 a), and Dillman (2007), provided procedures developed through research for increasing response rates and preventing nonresponse error, and many of these procedures were followed in this study in order to avoid nonresponse error. Details describing the procedures taken in this study are described more specifically in Chapter Three.

It was assumed at the onset of this study that all participants would have access to a computer and the Internet because all had published email addresses. It was also assumed that all participants were able to use the technology necessary to participate in this study by nature of their profession and level of education. A commercial digital survey service was used to facilitate data collection, reduce measurement error, and avoid technical and design difficulties that might increase nonresponse (Porter, 2004; Dillman, 2007).

Efforts were made to identify and invite all early childhood teacher educators in South Carolina as they became known to the researcher. At least one early

childhood teacher educator from each of the 45 post-secondary institutions in South Carolina with early childhood programs was invited to participate in the study, with the exception of one junior college that did not have any ECE faculty teaching in the school's early childhood program at the time of this study. However, because faculty information is not always updated and because faculty change from semester to semester, it was difficult to create a census frame with the most current contact information for all ECE teacher educators, limiting the ability of the researcher to confirm she had accurate contact information for all ECE teacher educators.

In addition to the above described limitations, this study was also limited by the following factors: (1) many post-secondary institutions in South Carolina offering early childhood education programs were small (less than one-thousand students total), and do not have education faculty specifically designated as early childhood teacher educators; (2) smaller institutions relied on many adjunct and part-time faculty and/or guest lecturers to teach early childhood courses, and these educators were often not included in faculty directories or given email accounts at their employing institutions; (3) many of the smaller schools also tended to integrate early childhood education programs within general education or elementary education departments. Educators teaching in these institutions with integrated early childhood programs many times taught a range of education courses in education or did not regard themselves to be early childhood teacher educators.

It is possible, therefore, that teacher educators who should have been included in the survey were not, and some educators invited to participate in the study did not because they were not identified by their institutions or did not regard themselves to

be ECE teacher educators. It was assumed that none of these limitations could have been avoided with the use of a random sampling rather than a census strategy. To help avoid over-sampling or using data from ineligible respondents, a filter question was included in the questionnaire that asked all participants to identify the number of early childhood courses they taught. Any respondent who chose the response: "I have never taught any ECE courses," was directed to the final page of the questionnaire and no data from these respondents were included in the final data analysis in this study. Only two ECE teacher educators invited to participate were found to be ineligible using the filter question and were disqualified from the study.

Definition of Terms

Key terms used in this dissertation study along with the definitions for these terms as set out in the literature are described below.

1. Adoption: "A decision to make full use of an innovation as the best course of action available" (Rogers, 2003, p. 21).
2. Communication channels: "The means by which messages get from one individual to another" (Rogers, 2003, p. 18).
3. Constructivism: A theory of learning based on Piaget's work, which views knowledge as developing through ever-evolving, internal processes as individuals create meaning from their interactions with their environment and construct knowledge as new information is perceived and compared with previous understanding (Bodrova & Leong, 1996; Essa, 2007).

4. Sociocultural Constructivism: “Sociocultural constructivism suggests development is not simply an unfolding of innate capacity, but varies with an individual’s context. Development results from a complex interaction between children and their environments, and cognitive activity occurs through social interactions with more knowledgeable peers and adults who provide support as children explore new understandings, knowledge and skills, and develop dispositions toward learning, and insights about themselves learners” (Bowman, Donovan & Burns, 2001, p. 214).
5. Developmentally Appropriate Practice (DAP): Refers to applying knowledge of child development in making appropriate and responsive decisions for and about young children. Decisions about teaching and learning are based upon understanding children’s ages and levels of development as well as sensitivity to their unique social, cultural, and historic contexts (Gestwicki, 2007). DAP is a framework rather than a set of practices. And it is a philosophical approach to working with young children (Bredekamp, 1993).
6. Diffusion: “[T]he process in which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of communication in which the messages are concerned with new ideas” (Rogers, 2003, p.5). Further, diffusion is a type of social change, defined as the process by which alteration occurs in the structure and function of a social system” (Rogers, 2003, p. 6).
7. Early Childhood Education Teacher Educators: In this study, ECE teacher educators were professors, assistant/associate professors, lecturers, instructors,

clinical or teaching faculty employed in institutions of higher learning **and** teaching one or more core early childhood education courses in their institution's early childhood education, child care or related ECE professional preparation programs.

8. Implementation: To implement REA meant to "use or include information about REA or some aspect of it" in courses. Further the survey instrument included the following definition of implementation: "To use or include REA in your work means to demonstrate or provide explicit instruction about the principles or practices of REA in your courses."
9. Innovation: An innovation is an "idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). Rogers identified five key attributes related to an innovation's rate of its adoption, these being:
    a. Relative Advantage**:** "The degree to which an innovation is perceived as better than the idea it supersedes" (Rogers, 2003, p. 15). Relative advantages can be perceived as savings in time and effort, conveniences and economic benefits, increases in social status, or awareness that an innovation provides a better way of attaining a goal (Rogers, 2003).
    b. Compatibility**:** "The degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters" (Rogers, 2003, p.15).
    c. Complexity: "The degree to which an innovation is perceived as difficult to understand and use" (Rogers, 2003, p.16).

d. Trialability: “The degree to which an innovation may be experimented with on a limited or trial basis” (Rogers, 2003, p.16).

e. Observability: **“**The degree to which the results of an innovation are visible to others” (Rogers, 2003, p. 5).

10. Innovation-Decision Process: **“**The process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to the formation of an attitude toward the innovation, to a decision to adopt or reject, to implementation an use of the new idea, and to confirmation of the decision” (Rogers, 2003, p. 20). Rogers’ model of the process consists of five stages:

    a. Stage One (Knowledge):“When an individual learns of the innovation’s existence and gains some understanding of how it functions” (Rogers, 2003, p. 20).

    b. Stage Two (Persuasion):“When an individual forms a favorable or unfavorable attitude toward the innovation” (Rogers, 2003, p. 20).

    c. Stage Three (Decision):“When an individual engages in activities that lead to a choice to adopt or reject the innovation” (Rogers, 2003, p. 20).

    d. Stage Four (Implementation):“When an individual puts an innovation into use” (Rogers, 2003, p. 20).

    e. Stage Five (Confirmation):“When an individual seeks reinforcement of an innovation-decision that has already been made, but the individual may reverse this previous decision if exposed to conflicting messages about the innovation” (Rogers, 2003, p. 20).

11. Innovativeness**:**"The degree to which an individual is relatively earlier in adopting new ideas than other members of a social system" (Rogers, 2003, p. 22)
12. Knowledge of REA: Participants identified their level of knowledge about REA in one of five ways: (1) no knowledge/I never heard of REA, (2) little knowledge/I am aware of REA but know little about it, (3) Some Knowledge/I know about REA, (4) Much Knowledge/I am very familiar with REA, and (5) Considerable Knowledge/I have considerable knowledge of REA.
13. Rate of adoption: **"**The relative speed with which an innovation is adopted by members of a social system" (Rogers, 2003, p. 23).
14. Reggio Emilia Approach (REA): A tightly interwoven system of theories, principles, and practices and a system of early care and education as demonstrated by the municipal infant/toddler and preprimary programs of Reggio Emilia, Italy and developed by Loris Malaguzzi and others based on a number of established theories of knowledge and learning (Edwards, Gandini, & Foreman, 1993).
15. Re-invention: **"**The degree to which an innovation is changed or modified by a user in a process of its adoption and implementation" (Rogers, 2003, p. 17).
16. Rejection: "A decision not to adopt an innovation" (Rogers, 2003, p. 177).

Additionally, variables measured with the survey instrument were defined as follows:

1. Age was identified in seven ranges of ten years, from 20 years through 80 years and older.

2. Annual household income (before taxes) was set out in six ranges: less than $20,000; $20,000 to $40,000; $40,001 to $60,000; $60,001 $80,000; $80,001 to $100,000; $100,001 or more. Participants were asked to identify which income range they belonged and wide ranges were used to avoid making participants feel uncomfortable or from asking for information that was too precise or too personal, which could have hindered data collection (Dillman, 2000).
3. Racial identity was described with six categories based on the Office of Management and Budget's standard classification scheme as set out in the U.S. Department of Education's publication, *The Condition of Education*, published in June, 2006, and available online at http://ww.edpubs.org. The categories include: *Hispanic; Native American; Asian or Pacific Islander; African American; White, not Hispanic;* or *other,* as specified by participants in an open-text box.
4. Sex (gender) was described as *male* or *female*.
5. Level of education was defined as highest degree earned: *Associate's; Bachelor's; Master's; Educational Specialist; or Doctorate.*
6. Current Position was defined as *fulltime or parttime faculty, graduate student/teaching assistant, adjunct/itinerant/lecturer/instructor,* and *other* as specified by participants in an open-text box.
7. Professional Development was measured with four items on the survey. One item asked the number of professional organizations participants belonged to, and three items asked the number and type of professional

conferences or workshops attended annually per year, including: the number of in-state, national, and international conferences. Data on professional organizations and conference attendance allowed the researcher to describe participants' social networks. Attending only a few in-state conferences suggested participant belonged to more localized social network, whereas attending a higher number of in-state, national, and international conferences suggested participant had more social participation, and more opportunities to be exposed to new ideas.

8. Teaching experience was measured in years of teaching (preschool through college level), in ranges from less than one year, 1-3 years, 4-6 years, 7-10 years, 11-20 years, and 20 years or more.
9. Employing institutions**,** also referred to as institutions of higher education or higher learning, and postsecondary institutions were defined using the National Center for Educational Statistics (2006) definition: "institutions with formal instructional programs and a curriculum designed primarily for students who have completed the requirements for a high school diploma or its equivalent" (p. 250). Categories used to define postsecondary institutions in this study were based on the South Carolina Commission on Higher Education's categorization of institutions as 4-year institutions and 2-year institutions. The NCES defined 4-year institutions as those "institutions or branches that award a 4-year degree or higher in one or more programs, or a post-baccalaureate, post-master's, or post-first-professional certificate" (NCES, 2006, p. 250). The NCES defined 2-year

institutions as “institutions or branches that confer at least a 2-year formal award (certificate, diploma, or associate’s degree), or that have a 2-year program creditable toward a baccalaureate degree” (NCES, 2006, p. 2005).

10. Postsecondary institutions were further described by “type of financial control: public, private not-for-profit; or private for-profit” as set out in NCES, 2006, p. 250 and the Carnegie Foundation of Institutions of Higher Education classification list (2000). For purposes of this study, private institutions included both not-for-profit and for-profit institutions. Postsecondary institutions were further described by specialized sub categories, as defined by the Carnegie Foundation Classification of Postsecondary Education, and listed on the survey as: theological seminaries and other specialized faith-related institutions; teachers’ colleges; tribal colleges, historically Black **c**olleges or universities, or other specialized institutions as specified by participants. Historically Black colleges and universities, according to Coakum (2001), are not currently included as a subcategory of specialized institutions under the Carnegie Classification System, but for purposes of this study, because there are a number of ECE teacher and caregiver education programs in HBCUs in South Carolina, HBCUs were included under specialized institutions in this survey. Open-responses were available for participants to describe their employing institution if the descriptors provided were not adequate.

Summary

The field of early childhood education is currently undergoing profound changes and challenges, and it is unclear how these changes are shaping the direction of early childhood teacher/caregiver preparation. Fullan and Hargreaves (1996) argued teachers are important agents of change in education, but are often caught between tensions that arise from those changes imposed upon them from outside the field as well as from changes from innovations occurring within the field. As Wood and Bennett (1999) argued, there is a need to understand "more about teachers' knowledge, their conceptual frameworks, how teachers vary, and how they relate to the structural organizational and cultural contexts in which they work" (Wood & Bennett, 1999, p. 1).

CHAPTER TWO

REVIEW OF THE LITERATURE

The purpose of this chapter is to provide a broad overview of key studies used to inform and support this dissertation and to place this study within the broader context of the research literature. First, an overview of early childhood education and ECE teacher education is provided along with a review of key studies influencing the direction of early childhood teacher/caregiver education in the United States. Next, the historical and philosophical roots of the Reggio Emilia Approach is provided, followed by a synopsis of the basic practices and principles of REA and a brief overview of the literature describing the influence of REA as an innovation in ECE in the United States. Finally, Rogers' (2003) Diffusion of Innovations Theory is described and a discussion provided of how the theory informed the investigation into REA in ECE teacher education for purposes of this dissertation.

Overview of ECE and ECE Teacher Education in the U.S.

Early childhood education in the United States developed from three distinct and, at one time, separate traditions, which have evolved and intersected over time. These three traditions are the day nurseries, the nursery schools, and the kindergarten movement. Spodek and Saracho (2003) noted three distinct educational perspectives or philosophical ideologies shaped the three early childhood traditions, namely romantic ideology, the cultural transmission perspective, and progressive ideology.

In the nineteenth and twentieth-centuries, theories of child development focused on maturation and the biological processes of growth and were more romantic than scientific in nature. Childhood was considered a unique stage in human development and theories of development focused on ages and stages of growth and development. Stages theories and theorists such as Arnold Gesell and Sigmund Freud had roots in the works of Jean-Jacque Rousseau, Johann Pestalozzi, and Friedrich Froebel (Spodek & Saracho, 2003). It was Rousseau who was perhaps the first to suggest that childhood was a unique and important time in human development. He stressed that each child was a unique individual that should be encouraged to develop in his or her own way (Wardle, 2003). He was also among the first to suggest the need to develop appropriate learning environments for children. In his book *Emile* published in 1762, Rousseau expressed the view that children were born innately noble and good but hindered by adults from developing in accordance with their good nature. He purported that children should be protected from the corrupting influences of society and allowed to develop in close commune with nature and in ways that were satisfying to children. He did not describe specific teaching methods, but did believe that if children were unhindered by adults, they would develop into happy and productive adults (Essa, 2007).

Johann Pestalozzi, a Swiss educator, developed educational methods based on Rousseau's ideas and established schools in Germany to showcase his teaching methods, which focused on children's play and the use of concrete, sensory materials. In 1801, he published his pedagogical perspectives in *How Gertrude Teaches Her Children*, and many Europeans were drawn to his methods and schools, the most notable being Friedrich Frobel.

Froebel later taught in Pestalozzi's Model School in Frankfurt, Germany (Manning, 2005), but developed his own philosophies of education. Later, at age 58, Froebel opened his own school for young children in Germany, which became known as "kindergartens" because classes were offered out of doors in a children's garden. Underpinning Froebel's methods was his philosophy of education based on three main which focused on the interconnectedness of man, nature, and God, a respect for children as individuals, and the importance of play (Manning, 2005). Froebel's approach to early education provided children with a highly organized learning sequence using specific materials and activities, which he termed *gifts* and *occupations.* Manning (2005) explained, "Froebel designed these 'gifts' as well as a sequence of 'occupations'...in order to teach children the uses of paper, clay, and drawing in multiple ways" (p. 373).

Froebel's methods diffused quickly around the world with Froebel's students (Rogers, 2003). Between 1848 and 1852, 31 kindergartens were established in Germany and all across Europe and the West (Manning, 2005; Hewes, 1990). Margarthe Meyer Schurz, a German immigrant to the U.S., is said to have opened the first U.S. kindergarten, which she operated out of her home in Watertown, Wisconsin. She is also credited with introducing Froebel's ideas to Elizabeth Peabody, an influential socialite from Massachusetts. Peabody zealously advocated for the establishment of kindergartens for all American children, believing kindergarten was an efficient way to reach immigrants for God (Baader, 2004). In 1868, Peabody even persuaded the Milton Bradley Company to commercially market Froebel's gifts to U.S. consumers (Froebel Web, n.d.). In 1877, Froebel's book *How Gertrude Teaches Her Children* was translated

into English (Hewes, 1990), which helped to further popularize and disperse his ideas in the U.S.

Susan Blow, a student of Froebel's, was also influential in spreading Froebel's Kindergarten movement in the U.S. Blow, who met Froebel around 1870, opened the first public school kindergarten program in the U.S. in 1873 in a small town near St. Louis, Missouri. Blow was a passionate spokesperson for the Kindergarten Movement, so much so that by 1883 every St. Louis public school had a kindergarten program. Blow also trained hundreds of kindergarten teachers, known as Kindergarteners, in Froebel's methods (State Historical Society of Missouri, 2006; Hewes, 1990).

In 1886, one of Blow's students, Elizabeth Harrison, started her own school for kindergarten teachers in Illinois, which was later named the Chicago Kindergarten Training School. Harrison also published the *Kindergarten Magazine* and, in1892, she helped found the International Kindergarten Union. By 1900, there were over 5,000 public school kindergarten programs and more than 200 training schools for kindergarten teachers established nationwide (National-Louis University 2005). However, around 1851, the German government banned Froebel's kindergartens in the country, labeling Froebel as "an agent of the socialist movement" (Rogers, 2003, p. 73). This energized Froebel's students to carry the Kindergarten Movement around the world, even though they did not always authentically reproduce his methods. Hewes (1990) noted that Froebel's methods, because they were not well understood in other countries, became open to a wide range of interpretations. An d the zeal and speed in which Froebel's methods disseminated often led to their being reinvented rather than reproduced (Rogers, 2003).

According to Hewes (1990), American Kindergartens were less Froebelian than many have supposed. Hewes explained,

> American publications have been based primarily on writings of those who attempted to systematize and improve upon Froebel's philosophy and methods....European teacher training programs, with less emphasis on Froebelian manufactured materials and more understanding of his basic philosophy about creative play, seem to have remained closer to the original philosophy than have those in the United States. (Hewes, 1990, p. 6)

Historians have suggested that teacher educators, including Susan Blow, may have over-simplified Froebel's principles and methods in an effort to standardize training and quickly establish kindergartens across the U.S. Even Harrison, one of Blow's most celebrated students, questioned the abilities of Blow's teachers to understand and reproduce Froebel's practices. Harrison wrote in 1930,

> [A] number of her [Blow's] students showed by their work that they had grasped details only, instead of fundamental principles, and consequently did not have the flexibility and freedom necessary for creative work founded on the selection of educative environments, the experiences, and the culture background of each group of children; consequently, their work became formal and non-creative. (as cited in Hewes, 1990, p. 71)

Other changes in the U.S. worked against the spread of Froebel's kindergartens in the U.S. by the turn of the twentieth century. First, local school authorities, particularly in St. Louis, wanted greater authority and control over public school programs, including kindergarten programs embedded in their primary schools (Goffin & Wilson, 2001; Nourot, 1993). And, second, "philosophical dissensions" (Nourot, 1993, p. 10) were growing among members over Froebel's ideas in light of newer, scientifically-laced theories proposed by the Progressives and the Child Study Movement. In order to combat the second challenge, the Association commissioned a Committee of Nineteen in 1903 to create a unifying position statement merging core Froebelian beliefs with Progressive ideology; however, the task proved to be "too difficult" for the Committee (Nourot, 1993, p. 10). After 1913, early childhood education, for the most part, coalesced under the Progressives and Child Study Movement, although there was no unifying vision guiding the field (Goffin & Wilson, 2001), which remained fragmented until the 1980s and the publication of the NAEYC's position statements defining developmentally appropriate practices (Bredekamp, 1987; Nourot,1993;Goffin & Wilson, 2001).

During the 1920s and 1930s, early childhood education splintered into three distinct branches: kindergartens, day nurseries (child care), and nursery schools (preschools). Day nurseries were established primarily to provide custodial care for infants and young children whose mothers, typically impoverished, needed to work outside the home (Goffin & Wilson, 2001; Spodek, 1991). Nursery schools, on the other hand, served children of mostly upper and middle-class families and provided half-day, social and emotional "enrichment" experiences for young children (Goffin & Wilson,

2001, p. 17). Kindergarten programs were typically embedded within established public elementary schools and focused primarily on preparing young children for formal education. There were also many independent or free kindergartens established throughout the country, mainly in urban areas. Like day nurseries, free kindergartens were organized as charitable programs designed to serve children of immigrants and working-class families. Pauline Shaw and the Peabody sisters of Massachusetts opened a number of free kindergartens across the state. As explained by Goffin and Wilson (2001),

> Kindergarten, day nurseries, and nursery schools experienced separate histories prior to the 1960s, served different populations of children, and developed distinctive purposes. Their curricular focus, although primarily centered on social and emotional nurturance, ranged from custodial to enrichment to school readiness. (p. 17)

Despite the divisions in the field of early childhood education, all three traditions were strongly influenced by the theories of maturationism. Maturationism melded philosophies from both Rousseau's romanticism and G. Stanley Hall's progressivism, and described children's development as an inherent course of unfolding (Berk, 1999). Maturationism also purported children's growth followed a preprogrammed timetable and held that it was stressful and possibly harmful to subject children to activities not in line with their natural timetable of development. Arnold Gesell (1880-1961), an important figure in maturationism, studied the genetic processes of children's physical development and observed and recorded the behavior of hundreds of infants and children

from all over the world. From his observations, Gesell developed benchmarks setting out universal ages and stages of children's physical development. The influence maturationism had upon practices in early childhood education were many, including the practice of carefully studying and observing young children to discover the stage of development they were in so that activities and learning experiences could be specified to individual children's developing abilities. Maturationism did not consider the role of the environment or social interaction to be strongly influential in children's development.

Another educational ideology that strongly shaped the field of early childhood education in the twentieth century was that of cultural transmission. Cultural transmission focused on "passing down what is known by the older generation to the newer generation, often using direct instruction or applied behavior analysis to characterize its methods" (Spodek & Saracho, 2003, p. 8). In the 1960s and 1970s, the social and political movements in the U.S. coupled with new findings from psychology regarding the influence the environment had upon development (Hunt, 1961) and the importance of the early childhood years to future educational achievement (Bloom, 1964), brought about a renewed interest in early childhood education (Goffin & Wilson, 2001; Nourot, 1993). Many educational policies and initiatives in the 60s and 70s aimed at providing children with different abilities and children from low-socioeconomic with better access to educational and economic opportunities.

With the initiation of the Head Start program in 1965, much hope was placed in early childhood education for becoming the catalyst for both educational and social reform. For the most part, early childhood education was conceptualized as a form of social and academic intervention for young children living in poverty or suffering from

some form of social or cultural deprivation. As Goffin and Wilson (2001) explained, "[G]overnment support for early education as intervention was not only socially amenable at the time, but politically acceptable as well" (p. 19). Federal money was allocated to develop effective curricula models and early childhood programs designed to successfully ameliorate outcomes for young children. As a result, many new, experimental early childhood education models were created based upon various developmental and learning theories (Goffin & Wilson, 2001). Goffin and Wilson (2001) further reported that these various "curriculum models ranged in focus from didactic, drill-oriented programs of instruction in school-specific content to programs emphasizing child discovery and enrichment" (p. 25). Most programs, however, focused on cognitive outcomes for young children. Goffin and Wilson (2001) also suggested that "the federal government's support of curriculum models [in the 1960s] was, in part, a search for the best way to structure its investment" (p. 25). Further, increased attention and federal dollars fueled competition within the field and helped reformulate early education as a form of early intervention. It also fueled a new focus on readiness and a drive to align early education curriculum with the more academic practices of the primary grades, believing that aligning the curriculum would better prepare or ready young children for formal education. This drive to align early childhood curriculum trickled down to the preschool years when public schools began offering school-readiness programs for children from low-income families as young as three and four years of age. Public, preschool programs for very young children also stirred the creation of new preschool curriculum models that drew from the varied traditions of child development, early education, and primary-school models (Goffin & Wilson, 2001). Some of these

preschool models were also strongly influenced by the emerging learning theories of behaviorism and B.F. Skinner.

Unlike maturationism, behaviorism considered development from the perspective of external rather than internal forces and learning seen as a response to experiences rather than inherent behavior. Further, behaviorism purported children were passive learners whose behavior was shaped through conditioned responses. Using behaviorist theory, teachers were trained to create lessons plans guided by behavioral objectives and were encouraged to employ strategies designed to shape student behaviors through demonstration, practice, rewards, and punishment. Mastery learning, programmed learning, and direct instruction were behaviorist approaches introduced into early childhood education in the 1960s.

Later, in the 1970s and 1980s, in response to the increasing numbers of mothers in the workforce, research attention shifted away from curriculum models to studying the effects long-term childcare had on children's growth and development (Goffin & Wilson, 2001). Major longitudinal studies published in the 1980s, such as the Perry Preschool Study (1985) and the Consortium for Longitudinal Studies (1983), "demonstrated positive effects for children who experienced early care and education," and helped reinvigorate public interest in and support for both early care and education programs (Goffin & Wilson, 2001, p. 124).

Increased attendance in early childhood programs of all types along with the groundbreaking position statement regarding developmentally appropriate practices put forth by the National Association of the Education of Young Children's (NAEYC) in 1987, helped draw together all three segments of early childhood education—nursery

education, kindergarten, and day care (Bredekamp, 1987). The NAEYC's initial position statement supplied a "description of early care and education practices around which the field coalesce[d]" (Goffin & Wilson, 2001, p. 30) and helped raise the professional stature of early childhood education.

Early childhood education in the 1990s provided a different setting for the ongoing development and implementation of early childhood curriculum models. Using new theories of child development and learning and taking the perspective of developmentally appropriate practices, early childhood education initiated national debate over the "structure and content" (Goffin & Wilson, 2001, p. 122) of early childhood in terms of developmental versus academic curricula (Elkind, 1987).

In 1986, Schweinhart and associates published the results of a longitudinal study comparing the outcomes of children attending an early childhood program using a developmental approach (High/Scope) with the outcomes of children attending programs using a more traditional, non-academic approach and a direct-instruction approach. The study's findings suggested that children participating in the direction-instruction program "were more likely to engage in delinquent acts" than children experiencing the other two types of programs. Findings from this study raised questions about possible harmful effects of direct-instruction models on young children and helped bolster support for developmentally appropriate practices (Elkind, 1987; Goffin & Wilson, 2001).

Also challenging the direct-instruction and behaviorist models were emerging theories of constructivism and social constructivism. Constructivism, as described by Jean Piaget (1896-1980), challenged established behaviorists' perspectives of children as passive learners. Constructivists purported that children actively construct knowledge for

themselves as children manipulate objects and explore their environments (Berk & Winsler, 1995). Piaget posited cognitive development was an internal activity of organizing new knowledge in relation to previous knowledge gained through sensory experiences. He described cognitive development as a process influenced by the interaction of biological and environmental forces and suggested normal, cognitive development occurred in sequential stages.

Social constructivists have challenged a number of Piaget's ideas, emphasizing the importance individual culture and social interactions have upon knowledge construction and cognitive development. Lev Vygotsky (1896-1934) suggested cognitive development was not as uniform as Piaget theorized, but that development was socially mediated and that adults and peers played an important part in influencing and directing children's developmental trajectories (Berk & Winsler, 1995; Bodrova & DeLong, 1996; Fosnot, 1996).

New understandings about growth and development made possible through advances in technology, medicine, and neuroscience, along with the infusion of social constructivist ideologies have challenged the predominance of previous developmental theory in terms of universal norms and "individualistic meaning-making" in early childhood teacher education (Richardson, 1997, p. 17). Social constructivism suggests teachers value the importance of individual children's culture, language, background experiences, and family contexts and recognize that learning and development are "two different processes that are complexly related to each other" (Bodrova & Leong, 1996, p. 12). Unlike other prevalent views about learning based on the power of biological maturation, social constructivism proposes that maturation does not totally determine

development. “[I]n the Vygotskian framework, not only can development impact learning, but learning can impact development” (Bodrova & Leong, 1996, p. 12).

In addition, the field has also challenged to consider postmodern perspectives that argue the purpose of early education is to ameliorate social and educational inequities. Postmodernists such as Ryan and Grieshaber (2005) question “whether developmentally appropriate practice is and can be, inclusive of all children’s learning styles” (p. 35), and purport that early childhood professionals must “gain an understanding of the politics of their work as well as the roles that they and the educational system play in perpetuating educational inequities” (Ryan & Grieshaber, 2005, p. 35).

Furthermore, increased demands for high-quality early care and education programs have added new pressures to produce a well-trained, highly-qualified early childhood workforce. According to Bowman, Donovan, and Burns (2001), “The knowledge and skills of teachers are among the most important factors in determining how much a young child learns” (p. 275). Findings from research also point to the professional training of early childhood teachers and caregivers as being strongly linked to the overall quality of early childhood education programs (Cassidy, Buell, Pugh-Hoese, & Russell, 1995; Howes, Whitebook, & Phillips, 1992). For example, the *Cost Quality and Outcomes* study (1995) found that the higher the level of teacher education the higher the level of program quality (Howes & Sanders, 2006). Studies looking into quality ECE programs also found that early childhood professionals who completed a college program and obtained either a Bachelor’s degree in early childhood education (ECE) or an Associate’s degree in child development (CDA), were more sensitive and

responsive to children's needs than early childhood professionals with less training (Phillipsen, Burchinal, Howes, & Cryer, 1997).

The Cost Quality and Outcomes study team (1995) also linked the level of professional education with teacher effectiveness as measured by children's achievement on the Peabody Picture Vocabulary Test (PPVT). They found young children whose teachers had Bachelor's degrees achieved higher scores on the PPVT than children whose teachers had only a high school diploma and workshop training or college courses (Howes & Sanders, 2006).

Similarly, Howes and colleagues in the *Florida Quality Improvement Study* (1998) examined early childhood teacher education and measures of quality, including the degree of positive interactions between adults and young children, appropriateness of activities planned for young children, and the levels of responsiveness to children's needs (Howes & Sanders, 2006). The authors found that the higher the professional preparation of teachers, the more positive the interactions between adults and children and the higher the overall quality of the programs. Building on these studies, Whitebook (2003) suggested that one of the best ways to assure quality early childhood education for all young children was for all early childhood professionals to obtain a minimum of a Bachelor's degree in early childhood education or a related field. However, Whitebook (2003) also noted that no specific evidence exists regarding the advantages of a Bachelor's over an Associate's program, nor specific information regarding the differences in program content between Bachelor's and Associate's programs. Whitebook concluded that "along with formal education, the content of training warrants further investigation" (p. 9).

ECE Teacher and Caregiver Education Programs

The Association for Childhood Education International (ACEI, 1998) posited that early childhood education can be improved by raising qualification requirements of early childhood professionals. The ACEI (1998) recommended all early childhood professionals be required to train within comprehensive teacher preparation program in higher education and obtain a professional teaching license or certificate (Spodek & Saracho, 2005). Bowman, Donovan and Burns (2001) found wide variances exist among ECE teacher and caregiver preparation programs. The authors described early childhood education as a patchwork system comprised of both public and private institutions and directed by varying aims and purposes, many of them commercial in nature. And Spodek and Saracho (1998) found little uniformity in licensing and qualification requirements for ECE professionals across states and across program types, i.e., private versus public early childhood programs.

In recent years, a wide range of publications and national reports have asserted the need for urgent reform in teacher education, including early childhood teacher education (Burns, Donovan & Bowman, 2001; Early & Winton, 2001). Studies have pointed to a number of obstacles to improving ECE professional development, the most imposing obstacle, perhaps, being the fragmented nature of early childhood education in the United States and the persistently low wages paid to early childhood teachers and caregivers.

Krechevsky and Stork (2000) stated an "imperative" need to "revisit assumptions about teaching and learning that have guided us in the past" (p. 58). These authors and many others have recommended further investigation of the Reggio Emilia Approach

because it challenges former developmental perspectives and provides a new way for "imagining classrooms of the future" (Krechevsky & Stork, 2000, p. 57; New, 2003).

Overview of the Reggio Emilia Approach (REA)

This section provides a more in-depth overview of early childhood education in Northern Italy as well as the history and development of REA in the United States. The philosophical underpinnings of REA and the theories and theorists who most influenced and shaped the approach are also reviewed in this section.

The state-supported system of early care and education in Italy serves as a model of universal care for the rest of the world. In Italy, although preschool is not compulsory, families are afforded two different levels of preschool programs for their children (Corsaro & Molinari, 2005). The *asilo nido* (early day care) is provided for children ages four to 36 months of age and the *scuola dell'infanzi* (preschool) is available for children three to five years of age. According to Corsaro and Molinari (2005), the term *scuola dell'infanzi* has recently replaced the former term for preschool, *scuola materna* (maternal school) "reflecting the change in the philosophy of preschools from a custodial aim to an educational one" (p. 165).

In addition, Italian parents are allowed to choose from among four different types of preschool programs. Two types of programs are public programs, one being state-run and the other a communal, or municipally-supported, public program. The other types of programs are private, and these are typically parochial or secular-cooperative programs. All public preschools are fully funded by state and local governments, but private schools can also receive some public funding if they agree to meet certain standards, such as requiring teacher professional development training of at least 20 hours of a year, limiting

class size to no more than 25 children per class, and including children with special needs.

Italian families can enroll their children in infant-toddler or preschool programs at any time during the children's preschool years, and once children begin in a program, they are kept with the same group of children and teachers until they finish in the program. Unlike other models of early care, Italian early care focuses on keeping young in small care groups and supporting the forming of strong relationships between children and their caregivers. Most Italian children begin attendance in preschool when they turn three and they stay with their classmates and teachers for their entire three years of preschool (Corsaro & Molinari, 2005). Parents can keep children in the same school even after they move so long as they provide transportation. Young infants in year-one classrooms are cared for in small groups of 10-12 children. Class size grows to around 20 children in year-two and three classrooms with up to three teachers in each room caring for a small group of children. Corsaro and Molinari suggest continuity of care is more valued and feasible in Italy, in part because "there is much less geographical mobility in Italy compared to the United States" (p. 166). Continuity in Italian education continues throughout the elementary school years and classes of children and teachers are kept together throughout the primary school years.

According to Corsaro and Molinari (2005), only about eight percent of Italian children attend infant-toddler programs nationwide; however, enrollment in preschool programs is "nearly universal" (p. 165), particularly in the Northern region of Emilia Romagna, where the town of Reggio Emilia is situated. The Emilia Romagna region also has the highest number of public preschool programs in the nation (Carsaro & Molinari,

2005). To better understand how the system of care and early education developed in Reggio Emilia, Malaguzzi (1993a) stated one must consider the historical and geopolitical context of the Emilia Romagna region.

With its fertile soil and varied agricultural resources, the Emilia Romagna region is often referred to as the bread basket of Italy. In the 1950s, this traditional farming region transformed itself into a booming, industrial economy through the manufacturing of agricultural machinery, textiles, and ceramics (Reggio Children, 2005). Over the years, the region has become well-known for its sizeable investments in social programs and its well-developed public-private system of early childhood educational services (Reggio Children, 2005). The town of Reggio Emilia, which is in the heart of the Emilia Romagna region, is a mid-sized, growing city of about 155,000 people (Reggio Children, 2005). Currently, there are 22 pre-primary schools in the city, 20 municipal and two affiliated co-operatives; and 24 infant-toddler centers, 13 municipal and 11 affiliated co-operatives (Reggio Children, 2005).

The current system of early care and education in Italy traces its roots back over one years to the charitable works of Aporti, the Agazzi sisters, and Maria Montessori. In the early 1800s, it was not uncommon for parents to abandon children due to extreme economic conditions in the Italy at the time. Churches and charitable organizations were the first to establish homes for impoverished and discarded children, but many of these institutions maltreated the children in their care. In 1828, Ferrante Aporti, a Catholic priest, opened one of the first schools for abandoned or impoverished children, and in 1844, and fourteen years prior to the founding of the unified nation of Italy, Rosa and Carolina Agazzi established the Children's House for homeless children (Röhrs, 1997).

At about the same time, Maria Montessori, the first female to graduate from medical school in Italy, began her work with children in the slums of Rome. Inspired by the works of Rousseau, Pestalozzi, Sèguin, Washburn, and Nunn, Montessori developed unique methods for teaching children and established her own school for children of working parents, called the *Casa de Bambini*, in San Lorenzo in 1870.

Montessori believed that by changing children's environments she could change their intellect (Röhrs, 1997). In addition, she believed it important to make children's interest and their direct exploration of sensory-rich materials the basis of early education. Montessori also advocated for a more scientific approach to understanding children through observation. Montessori and her ideas were not well-regarded in Italy in her own day and age; however, she became an important figure in the New Education Movement which reform movement in education in the early twentieth century, led by a group of progressive educators in Europe and the United States. Included in this group were Dewey and Kilpatrick in America, Decroly in Belgium Decroly, Ferrière and Bovet in Switzerland, and Nunn in England, all of whom set the stage for the development of REA in Italy after World War II (Malaguzzi, 1993a).

In the early twentieth century, education in Italy was dominated by the Roman Catholic Church, which resisted all government attempts to control education since the inception of the unified Italian nation in 1860. In 1922, when Mussolini's Fascist regime took power, the Fascists attempted to unify the nation by making numerous conciliations to the Catholic Church, including reinstituting compulsory religious training in all Italian schools. However, under Mussolini, education was turned into a tool for indoctrinating children in Fascist ideology rather than advancing religious beliefs (Röhrs, 1997).

Malaguzzi (1993a) recalled, "For 20 years under Fascism, the study of the social sciences had been suppressed, and European and American theories and experiences excluded" (p. 52). After Fascist control ended in 1945, a grassroots movement was started by Italian parents and educators to push for the reform in education that was started earlier by the progressives.

Six days after the end of the World War II, the people of Villa Cella, a small town also in the Emilia Romagna region, decided to build a school for its young children. Devastated by the war and the preceding Fascist regime, the town's people proposed to create a school that would "lead to new, more just world, free from oppression" (Gandini, 1997a, p.3). They built the school with their own hands using salvaged bricks and beams taken from bombed-out buildings and with materials purchased from the sale of an abandoned German war tank, three trucks, and six horses (Gandini, 1997a; Malaguzzi, 1993a). In subsequent years and as the Italian economy grew, more schools sprang up in towns surrounding Villa Cella, supported by the National Liberation Committee and the Union of Italian Women.

In the late 1960s, independent preschools were handed over to the municipal or city government as a result of the passing of several national laws, the most prominent being Law No. 444, which recognized the state's obligation to fund early education and the right of parents to be directly involved in their children's early education (Corsaro & Molinari, 2005). As in the United States, the 1960s in Italy were turbulent years. Italy's economy underwent immense changes and the nation moved from being a predominantly agricultural to modern industrial economy (Malaguzzi, 1993a). Many farmers and agricultural workers in the southern Italian regions migrated north to find better work in

industries. Women also entered the workforce in record numbers, and the women's movement began to gain national momentum. Economic changes also increased Italian standards in living, and by the end of the 1960s, Italy was much wealthier and more consumer-driven than ever before.

Politically speaking, particularly in the northern regions of Italy, there were strong shifts in positions from the traditional centrist right to a more progressive, socialist left. A powerful teacher's movement grew out of a national push for reform in education, which was similar to other reform movements occurring throughout Europe (Hendrick, 1997). The Movement of Cooperative Education (MCE), an organization of Italian elementary teachers, was formed in the early 1950s. The MCE sought new philosophical directions for education, and MCE leaders turned to the works a number of progressive theorists from education, psychology, and philosophy. According to Corsaro and Molinari (2005) "These developments brought about a re-conception of early childhood and a growing consensus regarding the need for preschool education" (p. 168).

A key turning point for progressive education in Italy occurred in the early 1960s, when Bruno Ciari, the leader of the MCE, was invited by city administrators in Bologna to re-organize and direct their school system (Hendrick, 1997). Ciari believed preschool education was important for every child and argued the need for the state to oversee and provide universal early care and education programs. However, Ciari's agenda was strongly opposed by the Catholic Church "who controlled virtually all of the preschools that were established before the 1950s" (Corsaro & Molinari, 2005, p. 168). According to Malaguzzi (1993a), "issues surrounding schools for young children were at the center

of fiery political debates. The need for them was undeniable, but the main debate was whether schools should exist as a social service" (p. 52).

Prior to 1968, "striking progressive preschool educational development occurred in the Emilia-Romagna area" (Corsaro & Molinari, 2005, p. 168) as a result of a strong push by a collation of unions and working women who fervently protested for public support of early childhood programs. There were many demonstrations and marches throughout the region, which resulted in the creation of the first municipally-funded preschool opening in Reggio Emilia in 1963, five years before Law No. 444 was passed (New, 2000). Malaguzzi recalled that a new era in Italian education began with the opening of the Robinson Crusoe school, the first municipally-supported preschool. He explained,

> For the first time in Italy, the people affirmed the right to establish a secular school for young children: a rightful and necessary break in the monopoly of the Catholic Church had hitherto exercised over children's early education. It was a necessary change in a society that was renewing itself, changing deeply, and in which citizens and families were increasingly asking for social services and schools for their children. They wanted schools of a new kind: of better quality, free from charitable tendencies, not merely custodial, and not discriminatory in any way. (Malaguzzi, 1993a, p. 44)

Loris Malaguzzi, who was a close friend of Ciari's, had also been investigating new directions in education through his studies in psychology at the Center for National Research in Rome. In addition, Malaguzzi studied at Piaget's *Ecole des Petits* (School for Young Children) in Geneva and worked as a volunteer consultant to the parent-run schools in the Villa Cella. In 1950, Malaguzzi opened the Psycho-Pedagogical Medical Center, a mental health center in Reggio Emilia, where he worked as a psychologist for more than twenty years (Reggio Children, 2005). Later, Malaguzzi was invited to run the parent-run schools in Reggio Emilia. In 1963, Malaguzzi helped establish the first municipally-supported, secular preschools in Reggio Emilia, which were the first such programs established in all of Italy (Hendrick, 1997). By the end of the 1970s, the Italian parliament passed additional laws providing for state-funded infant-toddler centers as well as preschools.

The Reggio Emilia infant-toddler and pre-primary programs attracted international attention as a result of its traveling exhibit, which was developed by Malaguzzi and educators with the intention of showcasing the pedagogical approach taken by teachers and children in Reggio's municipal preschools (Edwards, Gandini & Forman, 1993). The first exhibit was opened in 1980 at the Moderna Museum in Stockholm, Sweden, under the title, *The eye, if it leaps over the wall—hypothesis for visionary didactics* (Reggio Children, 2005). The exhibit's title was later changed to *The Hundred Languages of Children*, based on a phrase from a poem written by Malaguzzi and used to the many different ways children can and do express themselves. The exhibit displayed the works of the teachers and children of the Reggio schools and featured

photographs and explanatory texts of children's projects along with their sketches, paintings, collages, and 3-dimensional structures.

In 1987, the third and fourth exhibits traveled across North America (Edwards, Gandini & Forman, 1993), opening in the Boston, Massachusetts area. In 1991, the Reggio schools received worldwide attention after a panel of experts commissioned by *Newsweek* magazine declared the Diana School, one municipal preschool in Reggio Emilia, the "most avant-garde school in the world for education in early childhood" (Reggio Children, 2005, p. 30). In the years following, Malaguzzi and the Reggio municipally-supported schools received numerous recognitions and awards from around the world, including: the Ygdrasil-Lego Award (Denmark) in 1992; the Kohl Foundation Prize (Chicago, IL) in 1993; the Hans Christian Andersen International Prize (Denmark) in 1994; the Klods Hans Prize (Denmark) in 2000; Prize from the City of Blois (France) in 2001; the Gold Medal for Merit in Schools, Culture, and Art (Italy); and the Nonino Prize (Italy) in 2002 (Reggio Children, 2005).

Malaguzzi died in 1994, but his legacy continues through the ongoing work of the Reggio Emilia infant-toddler and preprimary centers, the Reggio Institute, located in Stockholm, Sweden, and the Loris Malaguzzi International Center in the city of Reggio Emilia. The Institute and International Center serve as hubs for educational, pedagogical, and cultural exchanges among researchers and educators who travel from around the world to study the Reggio approach to education. Reggio Children International Center for the Defense and Promotion of the Rights and Potential of All Children (Reggio Children), an Italian organization, was established in 1994 "to protect and enrich the educational theory and practice accumulated in the Reggio Emilia municipal

infant/toddler and preschool centers" (Edwards, 2001, p. 3). Reggio Children manages the many educational forums, consultation, and publishing activities as well as the study tours of the municipal programs, which have generated millions of Euros for the organization (Reggio Children, 2005).

According to Reggio Children's 2005 brochure, the organization's income sheet for 2003 showed Reggio Children had an income of over 1,400,000 Euros (p. 8). They also stated that as of 2003, Reggio Children has invested over one million Euros in the Childhood Fund, which supports the municipal infant-toddler and preschools as well as other initiatives and programs for children in Italy and around the world (Reggio Children, 2005, p. 8). In addition, Reggio Children has sold over 141,000 copies of books and audio-visual materials about the preschool programs in Reggio Emilia. And between 1994 and 2004, 116 study groups, representing about 14,000 people from 80 different counties, toured the Reggio Emilia centers and preschools (Reggio Children, 2005, p. 16). In addition, Reggio Children also collaborated with Harvard University and Project Zero in a study of children's use of symbolic and visual representations (Reggio Children, 2005).

Although the infant-toddler and pre-primary programs in the Emilia Romagna region are perhaps the best known municipal programs in Italy, many other Italian cities, including Bologna, Modena, Tuscany, Lombardy, Trentino, Piedmont, Veneto, and Liguria, have also established innovative early education programs that are similar to the preschools in Reggio Emilia (Edwards, Gandini, & Forman, 1993, p. 17). Many Reggio-inspired infant-toddler and preschool programs have also been recently established in the U.S.

REA in the United States

Since the introduction of REA to the United States through *The Hundred Languages of Children* Exhibit in 1987, networks of U.S. educators and researchers interested in REA have been developing, the most prominent being the North American Reggio Emilia Alliance, NAREA, and the RITE group for Reggio-Inspired Teacher Educators.

According to the NAREA website, there are several Reggio-inspired preschool programs and institutes in the U.S. The Merrill-Palmer Institute for Child and Family Development of Wayne State University in Detroit, Michigan, maintains the official web site for Reggio Children/USA, and publishes up-to-date information about tours, workshops, and resources about Reggio available in North America and Italy. Merrill-Palmer also publishes the *Innovations in Early Education: the International Reggio Exchange* a periodical devoted to disseminating information about REA. The Clearinghouse on Early Education and Parenting (CEEP), part of the Early Childhood and Parenting (ECAP) collaborative at the University of Illinois at Urbana-Champaign, also provides publications and information related to the Reggio Emilia Approach.

A number of private, Reggio-inspired programs have been established across the U.S., including programs in Franklin, Tennessee; Miami, Florida; Chicago, Illinois; Atlanta, Georgia; Huntsville, Alabama; Scottsdale, Arizona; Washington, D.C., and one in Greenville, South Carolina. In 1993, the Model Learning Center in Washington, DC was founded and represented collaboration between U.S. educators and Reggio Children. The Model Learning Center, which has since closed, was designed to be a model of the Reggio Approach and a hub for support, research, and training in REA in the U.S. Many

Reggio-inspired programs reflect collaborative efforts between child development centers and University schools of education, such as the St. Louis Collaborative, which is a network of three Reggio-inspired schools associated with Webster University. Many Reggio-inspired programs also reflect research and training collaborations between on-campus child-development programs and schools of education, including the Ruth Staples Child Development Center located on the campus of the University of Nebraska-Lincoln, the Child Study and Development Center on the campus of the University of New Hampshire; the Cyert Center on the campus of Carnegie-Mellon University; as well as the Sophie Rogers Lab school at Ohio State University; and the Child Development Center for Learning and Research on the campus off Virginia Polytechnic Institute.

Yet, despite these visible efforts to disseminate information about REA in the United States, experts suggest many American teacher educators are either unaware of or have a limited understanding of REA. According to Carolyn Edwards (interviewed by Stager, 2002), "As [REA] becomes more widely known, and as early childhood education professors teach about it in their classes, then its influence has the potential to be long lasting and profound" (p. 38).

Philosophical Underpinnings of REA

Soler and Miller (2003) compared REA with other early childhood approaches and suggested REA was one of the most strongly progressive approaches they investigated. Progressive approaches are based upon positive views of human nature and beliefs that people are capable of thinking for themselves, directing their own destinies, and cooperating for the greater good. Progressivism draws from the works of Rousseau, Pestalozzi, Froebel, Montessori, Owen, Dewey, and others. And Progressive approaches

are often described as child-centered approaches in that they tend to "downplay the role of authority and de-center the power of the teacher" and emphasize "the individual child as the center of curriculum activities" (Soler & Miller, 2003, p. 2). Progressive approaches are also known for valuing play as an important part of children's development and learning, and conceiving of the curriculum as building upon and following children's ideas, interests, and contexts (Kliebard, 1995).

Perhaps the one educator and theorist most closely associated with Progressive approaches was John Dewey. Over his lifetime, Dewey developed complex theories about the nature of learning and education that were shaped by his own philosophical views based on the works of Hegel and the American Pragmatists, James and Peirce (Kliebard, 1995). Dewey rejected the idea of supreme, immutable truth, believing instead that truth was created by individuals to help them solve their problems. According to Dewey, truth was both fallible and changeable. Similarly, knowledge was seen by Dewey as a tool for managing one's own experiences with the world and for solving problems. Dewey suggested knowledge should be judged as true or false based on its practicality or effectiveness in solving problems (Dewey, 1938).

Further, Dewey believed children were born innately motivated to learn and needed to be educated in such a way so that the curriculum of the school did not work against children's natural interests and motivations. In his book, *Democracy and Education* (1916), Dewey suggested knowledge was created when an individual actively pursued ideas and sought answers to problems or conflicts. For Dewey, learning and growth were active rather than passive pursuits that occurred when children investigated and reflected over their own experiences. He advocated that children learned best through

the process of active inquiry or questioning in which they developed their own theories and conducted tests and research looking for acceptable solutions. Dewey posited that children's intelligence grew as a result of their personal and collective experiences conducting research, testing ideas, and solving problems. He emphasized the importance of children developing and bringing to fruition their own ideas through active learning and social interaction (Rankin, 1997). He also believed that children learned much through manual activities, such as gardening and carpentry, in that through such activities were opportunities to learn to work in groups as well as gain basic academic skills. Dewey did not suggest, however, that learning should be left totally in the hands of children; rather, he believed teachers were responsible for providing children with activities and learning experiences that were within their grasp and context and that provided students with an orderly sense of the world in which they lived. According to Dewey, teachers were to be co-researchers and co-learners as they sought out new information with and guided the work of their students (Rankin, 1997).

Malaguzzi stated that much of the philosophies and practices of REA were based on Dewey's ideas (). Rankin (1997) noted many "points of agreement" (p. 73) between REA and Dewey. In particular, Rankin suggested REA and Dewey both purport that: learning is active, constructive, personal, and socially directed; that teachers play an important and active role in children's learning; that children and adults work collaboratively and in reciprocal ways; that children and teachers are co-researchers and co-learners; and that learning (growth) leads to further learning (growth).

However, Rankin (1997) also contended that REA moved beyond some of Dewey's original ideas about teaching and learning. For instance, REA extended

Dewey's concept of reflective thinking by using documentation to encourage individual as well as groups of teachers and learners to think reflectively about their own learning and behaviors. Documentation is also used as a vehicle for children to communicate and extend their thinking in a reflective manner.

In addition to Progressive ideology, REA draws heavily from the tenets of constructivism and social constructivism and from the works of Jean Piaget and Lev Vygotsky (Edwards, Gandini & Forman, 1993). Constructivism encompasses theories of how people learn as well as the nature of knowledge or epistemology. Constructivists claim "intelligence and knowledge are not static quantities or things; instead, intelligence and knowledge are even-changing processes," which develop as individual interact with the environment (Gredler, 2001, p. 239). Further, constructivists assert that learning is an internal process, which occurs as individuals actively construct knowledge for themselves through the organizing and accommodating of new information when comparing new information with previous knowledge. Other key tenets of constructivism suggests learning is an active rather than passive process and that learning is a mental process that creates a qualitative change in a person's cognitive structure. Further, according to constructivism, previous learning and past experiences are the frameworks used for understanding the world. And learning is a social activity that involves various cognitive and cultural tools, such as language and other symbolic and social skills. Further, constructivists emphasize the importance of connecting future learning with previous learning, which they purport happens when individuals reflect on what they know and what they have learned.

Many of the tenets of constructivism are based on the writings of Jean Piaget, an important theorist whose works strongly informed REA (Malaguzzi, 1993a). The basic assumption behind Piaget's theory of cognitive constructivism is that "knowledge is a process that is created by the activity of the learner" (Gredler, 2001, p. 240). Piaget described children's thinking as being qualitatively different from that of adults, and he suggested children's cognitive abilities developed "in the course of their thinking about their physical actions on objects and interactions with people" (Goffin & Wilson, 2001, p. 141). Piaget also asserted that children structured their thinking and built intelligence through the mental process of adapting and organizing information. He described the learning process in terms of the construction of mental schema or frameworks of knowledge, which were developed through cycles of disequilibrium or cognitive confusion with, assimilation, and accommodation of new information when confronted with previous knowledge.

Piaget also framed his theory of children's cognitive development in terms of stages. He purported that, typically, all children moved from the beginning or sensorimotor stage, to the preoperational, and then to the concrete operational, and finally to the formal operational stage as they grew to adulthood. Although Piaget's theories were not specifically theories regarding teaching and learning, they do have implications for education, including the use of active learning methods that engage children. Further, Piaget's theories suggested the need for children to be challenged cognitively, to experiment and test their ideas and provide "conflict among modes of thinking" (Gredler, 2004).

Piaget's influence can be seen in REA's attitude toward conflict, tensions and disagreements between and among children. Conflict, according to Reggio educators, provides opportunities for children to share ideas, reflect upon their own and others' perspectives, and to negotiate and solve problems. Conflict also provides children with important opportunities to reformulate their ideas and stimulates the process of disequilibrium, accommodation, and assimilation, which forms the impetus for learning and growth (Rinaldi, 1993).

Malaguzzi (1993a) acknowledged the influence of Piaget's theories on REA, stating,

> [I]n Reggio, we know that children can use creativity as a tool of inquiring, ordering, and even transgressing the given schemes of meaning (which Piaget attributed also to the very young in the last years of his life). They can use creativity as a tool for their own progress in the worlds of necessity and possibility. (p. 76)

However, Malaguzzi also contended that Piaget's view of cognitive constructivism isolated the child and undervalued the role of adults in children's learning. He disagreed with certain interpretations of Piaget's work that purported children's cognitive development occurred in a lock-step or stage-like fashion or that children's cognitive, affective, and moral domains developed separately. Malaguzzi further believed Piaget's perspectives overemphasized children's egocentrism, focused too much on classification skills and logicomathematical thought, and relied too heavily upon "paradigms from the biological and physical sciences" (1993a, p. 77).

Russian psychologist Lev Vygotsky's sociocultural theories of learning and development (social constructivism) have also greatly informed the tenets of REA, although his ideas were not as widely published until the latter half of the twentieth century. Vygotsky emphasized the cultural as well as the biological nature of human development. He believed that culture strongly influenced cognitive development in that children use the mental tools of the culture, such as language, to participate in the activities valued by their cultures (Fosnot, 1996; Goffin & Wilson, 2001). Vygotsky also posited that "learning leads development," which differed from the Piaget's view that "development precedes learning" (Goffin & Wilson, 2001, p. 2005). He also emphasized the social context of learning, arguing that children grow and learn as they interact with more competent learners within children's *zone of proximal development* (ZPD), which he stated was the range between children's abilities to perform independently and the potential for what they could accomplish with the aid of more competent learners. Educators have noted pedagogical implications of Vygotsky's sociocultural theories, particularly his ideas about children's ZPD. Scaffolding, for instance, is an educational term used to describe the various strategies for supporting children's progress in acquiring new knowledge or skills that are, at first, too challenging for children to acquire on their own (Fosnot, 1996).

Vygotsky's ideas about the social nature of learning are evident in REA. REA, unlike other approaches, recognizes the active role of adults and others in children's learning and places great value on the social nature of learning (Rankin, 1997). REA also acknowledges the importance of relationships in children's learning. As Rinaldi (1993) explained:

> Relationships, communications, and interactions sustain our educational approach in its complexity; they are powerful terms characterized by two important elements: action and group socialization. We consider them to be fundamental structuring elements toward the construction of each child's identity...[children's actions] can be understood as more than just responses to the social environment, they can also be considered as mental structuring developed by the child through social interaction. (p. 105)

However, REA departs from aspects of Vygotsky's theory, particularly with regard to the unidirectional transmission of information from more-competent to less-competent learner in the child's zone of proximal development. According to Rinaldi (1993) a child with lesser skills or knowledge has the power to foster the learning of a child with greater skills or knowledge, particularly if the child with less knowledge or skills provokes and challenges the more-knowledgeable child to question or reflect upon his/her thinking. Educators utilizing REA recognize that interactions, provocations and opportunities for joint problem-solving provides pairs or groups of children with a dynamic rather than a unidirectional pathway for learning.

Core Pedagogical Elements of REA

Malaguzzi explained that REA was not a curriculum. Instead, he purported, REA was a compilation of theories and ideas about teaching and learning that evolved over decades of experimentation and were profoundly shaped by the complex, historical,

political, and cultural experiences of the landscape of northern Italy, as well as by the work of a number of scholars, philosophers, psychologists, and progressive educators, including Dewey, Decroly, Ferrièr, Bovet, Vygotsky, Piaget, Gardner, Bronfenbrenner, and Bruner (Malaguzzi, 1993a). The essential principles of REA and the philosophies and theories informing REA are set out below.

The image of children as rich, powerful and capable learners, full of rights and potentials (Rinaldi, 2002; Samuelsson, Sheridan, & Williams, 2006; Soler & Miller, 2003) is the focal point of REA philosophy that informs all of the other key principles and practices of the approach (Rinaldi, 2002). In sharp contrast to typical ideations of young children as vulnerable and in need of protection, Reggio educators view children as competent, capable, powerful learners, full of ideas and potential. Children are seen as protagonists in their own development, interested in social interactions and in establishing relationships (Gandini, 1993; Rinaldi, 2006). Malaguzzi (1993a) believed such a strong image of children results from careful study and observation of them: "All people...who have set themselves to study children seriously—have ended up by discovering not so much the limits and weaknesses of children but rather their surprising and extraordinary strengths and capability linked with an inexhaustible need for expression and realization" (p. 72).

In addition, REA emphasizes the rights, rather than the needs, of young children. As Hendrick (1997) explained, REA educators support the idea that children have the *right* to the best societies can offer, including "the right to high-quality care and education that support the development of their potentials" (p. 17). Samuelsson, Sheridan, and Williams (2006) stated that, unlike other perspectives of ECE where

"children's needs are seen as the base for their rights," (p. 17), children's rights are made explicit in REA. The concept of children's rights is both a cultural as well as a political construct born from the historical experiences and socialistic ideologies of the Emilia Romagna region (Firlick, 1996; Rinaldi, 2003).

The strong image of the child contrasts with traditional notions that suggest children should be deferential and obedient to adults and with traditional views that picture children as vulnerable and in need of adult protection, structure, and control. REA elevates the role of the young children, raising their position to co-collaborators and co-constructors of knowledge along with adults. REA also challenges traditional transmission models and didactic methods of teaching that emphasize lecture, worksheets, and passive, pre-planned activities for children (Gandini, 1997b). REA elevates the role of children to that of an equal and co-constructor of knowledge with adults (teachers and parents), compelling teachers to "trust in the child's own ability to create meaning and reach an understanding of the surrounding world" (Samuelsson, Sheridan, & Williams, 2006, p. 15). Further, REA focuses on what children are and what they can do, rather than on what they will become or may be able to do in the future (Rinaldi, 2003).

The two other key elements of REA, collaboration and relationships, are also strongly entwined. At the heart of REA schools is the deep relationships formed as teachers, staff, children, and parents work together as part of their communities. Malaguzzi (1993a) identified the aim of REA as building an "amiable school" (p. 58) where three protagonists—children, teachers, and parents—can feel at home, get along

together, and build relationships (p. 58). Interactions and conversations, joint problem solving and relationship building are all seen as aspects of collaboration.

Also implicit in REA's tenet of collaboration is the idea of mutual respect. Teachers collaborate with other teachers and staff as equals. Therefore, in REA schools there are no designated lead or assistant teachers (Rinaldi, 2003). Collaborations are encouraged to happen between and among teachers working in the same room, the same school and with teachers from other schools and communities. The emphasis is on joint problem-solving rather than on managing and delegating as may be seen in a more hierarchical structure in the working relationships.

In addition to collaboration among teachers, REA also emphasizes collaboration among pairs and small groups of children. Malaguzzi posited that children were more capable of interacting and socializing if they were grouped in classes by age; therefore, REA does not make use of multiage classrooms. Collaborations are also supported by the physical layout of the environment, through the placement of furniture and lay out of materials, which are used to suggest to children the size of groups that can work in particular spaces. Interesting, collaboration in REA schools includes the inevitable conflict and disagreement that happens when groups of people work together. Rather than discourage conflict, conflict and disagreements are seen as providing children with opportunities to extend ideas, develop strategies for negotiating and solving problems with others, strengthen relationships, and consider alternate points of view (Rinaldi, 1993).

REA also emphasizes collaborations and relationship building between parents and teachers. Parents are considered partners and vital members of the school. Their

participation is expected and includes attendance at parent-teacher meetings and help with children's project work. Parents also are included in the decision-making and school planning by serving on advisory committees. And as suggested for children, REA parents are considered as having rights, particularly the right to participate in children's education (Malaguzzi, 1993a). Parent notebooks are often used in REA schools to facilitate communication between home and school. Notebooks include teachers' and parents' notes, observations, photographs, family records, and the history of children's home and school life (New, 1999).

Other core elements of REA include the use of emergent curriculum and support for children's symbolic representations. REA schools do not have a pre-planned curriculum. Instead, teachers and children together develop the curriculum, referred to as emergent curriculum because it based on children's interests, ideas, and questions and is developed slowly over time. Teachers develop general educational objectives, but specific goals, plans, and activities are not conceived in advanced by teachers, and their objectives are flexible (Hendrick 1997). Teachers develop projects by carefully listening, observing, and documenting children's ideas, questions, and conversations with others in an attempt to capture children's emerging abilities and uncover possible experiences and directions to be pursued. Projects and activities can also develop from experiences or activities initiated by teachers or other adults, or from unplanned events or problems that develop through negotiations and dialogues between teachers and children, teachers and other teachers, and teachers, parents, and community members. Projects evolve over time as teachers and children confer and construct ideas. Projects can last days, weeks, or even months (Gandini, 1993a).

In programs utilizing REA, children are encouraged to revisit and explore ideas in greater depth through the use of a variety of materials and media and by considering different perspectives or vantage points. For instance, children might explore an idea by creating an object related to the idea in clay and, later, consider the same idea but with paint or wire. They might examine objects through magnifiers or colored transparencies on overhead projectors. REA encourages children to consider and then reconsider their ideas in very different ways, a strategy Reggio teachers call turning children's thinking upside down.

Malaguzzi (1993a) suggested children have 100 languages, or multiple ways, to express themselves. These ways include drawing, moving, building, sculpting, music, and dramatic play (Edwards, Gandini, & Forman, 1993). Children's experimentation with expressing themselves through multimedia is called symbolic representations in REA. The emphasis on symbolic representations and the inclusion of an atelierista (visual arts teacher) and atelier (art studio) are unique features of the approach. The atelier is a room that is carefully prepared and organized with materials for explorations and expressions. Malaguzzi (1993a) described the role of the atelier as:

> [A] place where children's different languages could be explored by them and studied by us in a favorable and peaceful atmosphere. We and they could experiment with alternative modalities, techniques, instruments, and materials; explore themes chosen by children or suggested by us....to help the children find their own styles of exchanging with friends both their talents and their

> discoveries. But the atelier was most of all a place for research....So positive and confirming were our experiences that they eventually led us to expand the use of the atelier into the centers for the youngest children in the infant-toddler centers. (pp. 68-69)

Through symbolic representations, children's ideas are made visible as are the many ways children represent, symbolize, and makes sense of the world around them. The use of materials and visual arts is more than an exercise in aesthetic building in REA. Rather, children expressions are considered essential to constructing knowledge, testing ideas, and expressing understanding.

Documentation is another primary component of REA. Documentation is the recordation of children's work, ideas, and questions and can take the form of transcriptions of children's words and conversations as well as photographs, slides, videos or tape recordings of children's work. Children's work, such as sketches, paintings, collages, and 3-D constructions, are carefully displayed throughout REA programs. Visitors to Reggio schools are often quite impressed by the high level of work REA children create and the careful ways in which children's work are displayed in hallways, stairwells, and bathrooms (Edwards, Gandini, & Foreman, 1993). Such exhibits of children's work also serve to provide children with a sense of belonging and identity as members of the learning community school as well as communicate to children that their ideas are valued and appreciated (Katz & Chard, 2000).

Objects of children's work are at times grouped together in displays and documentation often consists of large panels chronically a particular project. These

panels are used to stimulate children's thinking as well as to describe their work to viewers. Documentation also serves as a data gathering strategy and a way to help children focus on and work through emerging or difficult ideas. In this way, documentation becomes a tool for making children's thinking visible to them and to others, and for helping children recall and retrace the process and products of their learning (Gandini, 2002). Documentation also serves to record the history of the school and are often retained and displayed for many years.

Documentation is further used by teachers to share children's ideas and their progress with parents and is used to support teacher's planning and professional development. Pedagogistas or school curriculum leaders, and atelieristas collaborate with classroom teachers on the development of projects, documentation displays, and children's portfolios, and the atelier serves as a workshop for developing documentation. Reggio teachers use documentation to record their own work with children and share documentation with other teachers in order to refine their work. In this way, documentation supports their professional development. Documentation in REA moves beyond traditional conceptions of recording children at work for purposes of assessment.

Documentation is also used to help teachers plan, focus, and extend children's learning, and becomes a tool of research for children. In this latter sense, documentation is a dynamic activity. It is used not only to communicate children's thinking to others but is used to communicate to children the value adults have for them, their ideas, and their capacities (Katz & Chard, 2000).

Another focal point in REA is the importance of the environment or the physical space and its role in supporting and extending children's learning, interactions, and

relationships. Because the physical space plays such a vital part in educating the child, it is often referred to as a third teacher by Reggio educators (Edwards, Gandini, & Foreman, 1993). According to Gandini (1997b), the physical space is designed to be welcoming, to "foster encounters, communication, and relationships....[and to] encourage choices, problem solving, and discovering in the process of learning" (p. 18).

The environment is carefully and thoughtfully prepared: rooms are painted with calming natural colors and flooded with natural light. Children's work is carefully and beautifully displayed throughout the schools and classrooms. Equipment and supplies are housed in open containers made of natural materials, such as woven baskets, and carefully arranged on open shelves, often against mirrored backdrops. Green plants are used abundantly. The space is purposefully designed to support and encourage interactions and group work of children, and includes small niches intended for only two children as well as open spaces for larger groups of children to work. Careful observations of children working in the space suggest to teachers the need to arrange or rearrangement the space to support children's work.

In REA, the space also represents the identities of teachers, children, and families in the centers. Space is created for each child, for storing their things and showcasing their personalities and work. Space is created for quiet interactions between parent and child and for large group gatherings and meeting (Gandini, 1993). Rooms and niches supporting parent-children interactions are evident, as is space for large and small group work by children and teachers. REA also makes use of a kitchen and dining area where children can cook and eat together, and where family meals and gatherings can happen. The school is designed to look and feel like a second home for children. Meals are

served on ceramic rather than paper plates and family-style tables are covered with cloth tablecloths to promote the look and feel of home.

In addition to the school atelier, or visual arts room, there are also mini-ateliers located in or next to each classroom to store art materials and project work. No amount of the physical space is considered insignificant or idle. REA Teacher look not only at well-functioning spaces, but also at spaces that are not working well, where few children visit, or where clutter accumulates. The inclusion of a variety of equipment and materials to support children's sensory explorations are also important features in Reggio schools. Many rooms include assortments of translucent materials along with light boxes, overhead projectors, flashlights, and mirrors to catch light, as well as a variety of materials that allow children to explore sounds, textures, and investigate various ways to move.

The role of teachers as partners, facilitators, researchers, collaborators and co-researchers with children is another distinctive component of REA. Teaching and learning are closely intertwined in REA and teachers are both observers and participants in children's work. Teachers engage in their own research through listening, observing, and documenting children's work. And they collaborate with children and extend learning by asking thought-provoking questions and suggesting tools, materials, and directions for project work. A pedagogista, or curriculum coordinator, works with schools and teachers, suggesting ways to further a project, refine skills of questioning, listening to, and documenting children's work, and supporting teachers' collaborations and interpretations of children's work. REA teachers ask more questions than they answer. Asking good questions is an important teaching skill that allows teachers to

uncover children's thinking, create well-timed discrepancies designed to challenge and extend children's thinking, and stimulate children's curiosities. The teachers' main duty, however, is to listen to children and uncover their understanding. Teachers then join with children in their explorations and activities and look for opportunities to further challenge children to move forward in their thinking (Rinaldi, 2006). And because teachers work closely with children they serve as an important "resource for children" (Gandini, 2002, p. 18), at times leading and directing activities and at other times, following children's leads. Teachers also model for children cooperation and problem solving strategies, as well as ways to use equipment and media. They facilitate children's activities and experiences and encourage children to test their own ideas and consider them more deeply or in different ways (Gandini, 2002).

Review of REA in the Literature

A review of the literature revealed REA has been a popular topic of discussion in education since about 1991. Most published articles provided overviews or explanations of REA, considered the theoretical underpinnings of REA, compared REA to other ECE approaches, or made an application of REA to various aspects of early childhood curricula (Cadwell, 2003; Hendrick, 1997; New, 2000; Katz, 1994; Edwards, Gandini & Forman, 1993). A number of more recent articles described REA in terms of a cross-cultural innovation in ECE settings in China, Japan, South Korea, England, Canada, and Sweden (Nyland & Nyland, 2005; Lee Lai Wan & Kam Sau Wan, 2005; Fawcett & Hay, 2004; Samuelsson, Sheridan, & Williams, 2006; Ishigaki, 2003; Berdoussis, Wong, & Wien C. 2005). A number of writers compared and contrasted REA with other

innovative approaches, including High/Scope, Waldorf, Te Whäriki, and Montessori (Copple, 2003; Edwards, 2002 & 2005; Samuelsson, Sheridan, & Williams, 2006; Soler & Miller, 2003). Some authors have also applied REA to teaching and learning in ECE in the areas of science, language and literacy, social studies, and environmental education (Christensen, Faith, Stubblefield, & Watson, 2006; Cesarone, 2005; Stegelin, 2003). Seefeldt (2002) provided strategies for teachers in planning and designing learning spaces for young children based on REA. Vakil, Freeman and Swim (2003), and Edmiaston and Fitzgerald (2000) described implications of REA for inclusive education, and Barbour and Shaklee, (1998) examined the use of REA in gifted education. Katz and Galbraith (2006) investigated the strategy of documentation to make visible children's social interactions within an inclusive preschool. They concluded that documentation techniques can serve educators as both a research and teaching tool for promoting social interactions among children in inclusive preschool settings.

The use of REA in higher education appeared in fewer articles, but these articles were mainly descriptive accounts of REA's integration into ECE programs rather than research studies. Goldhaber and Smith (1997) described the use of REA's strategy of documentation in a university-affiliated child care center. And Bullard and Bullock (2002) described how they facilitated a week-long course for teachers on using REA in primary classrooms.

The application of REA in teacher education and professional development has also been described in a number of publications (Callaghan, 2002; Hong & Trepanier-Street 2004; Goldhaber & Smith, 1997; Goldhaber, Smith & Sortino, 2002). However, few authors studied teachers' or teacher educators' use of REA. Ardzejewska and Coutts

(2004) surveyed Australian primary teachers committed to implementing the Reggio approach in their classrooms. The purpose of their study was to examine teachers' understanding of REA, to identify the elements of REA teachers believed were most useful in practice, and to describe teachers' beliefs about obstacles they faced implementing REA in their elementary-school contexts. The researchers found a wide variation in the participant-teachers' knowledge of REA, although most demonstrated a good understanding of the basic principles. The authors also noted that many of the participants had difficulty differentiating between core elements of REA from those elements of other child-centered approaches.

Diffusion of Innovations Theory

Gabriel Tarde, a French sociologist, is credited with originating diffusion research in the early twentieth century. Tarde observed how social networks influence imitative behaviors and suggested the adoption of innovations within social circles followed an S curve (Rogers, 2003). Since Tarde's work, research traditions in diffusion have evolved predominantly within particular fields or disciplines, such as agriculture or anthropology. Everett Rogers' (1995, 2003), however, was one of the first to publish a general theoretical model of diffusion of innovations, which is set out in all five editions of his book *Diffusion of Innovations* (1962, 1971, 1983, 1995, and 2003). Roger's model and operational definitions of diffusion theory have appeared in hundreds of studies across a wide range of disciplines, including agriculture, sociology, marketing, public health and medicine, and education (Ryan & Gross, 1943; Mort, 1953; Carlson, 1965; Fox & Kotler, 1980; Menzel & Katz, 1955 as cited in Rogers, 2003).

According to Rogers (2003) an innovation is "an idea, practice or object that is perceived as new by an individual or another unit of adoption" (p. 6), and diffusion is "a kind of *social change*, defined as the process by which alteration occurs in the structure and function of a social system" (p. 6, emphasis in the original). There are four key elements in the diffusion process, namely: the innovation, the communication channel, the time/rate of adoption, and the social system through which an innovation diffuses, and each element has "been identified in every diffusion research study" (Rogers, 2003, p. 11).

In the United States, two diffusion studies, the diffusion of hybrid seed corn in rural Iowa by Ryan and Gross (1943) (as cited in Rogers, 2003) and the study of the adoption of tetracycline in a New England medical community by Katz, Menzel, and Coleman (1953) (as cited in Rogers, 2003) form the basis of current diffusion research. Diffusion studies from the field of education, however, have proven "less important in terms of [their] contribution to the theoretical understanding of the diffusion of innovations" (p. 63). Nonetheless, Rogers' (2003) diffusion model has appeared in a number of studies investigating the dissemination of new ideas and new technologies across a variety of educational levels and contexts.

Diffusion Research in Education

Not surprisingly, researchers investigating the diffusion of educational innovations have focused predominantly upon the use of the tools of technology at various levels and in various contexts of education (Blumberg, 2001; Durrington, Repman, & Valente, 2000; Moore & Benbasat, 1991; Sahin & Thompson, 2006; Surrey & Farquhar, 1997; Yates, 2001). Diffusion of innovations studies in teacher education

have also focused primarily on the tools of technology (Butler & Sellbom, 2001; Surrey & Farquhar, 1997). There have been very few studies investigating theory-based innovations in educational contexts using Rogers' model, and many of these studies have appeared in dissertation literature.

Rogers' cited Mort (1953), Havelock (1969), and Miles (1964) as setting the groundwork in the diffusion literature in education, but stated that Carlson's (1965) study, which analyzed the spread of modern math among school administrators in Pennsylvania and West Virginia, was "the best piece of educational diffusion research" (Rogers, 1993, p. 65). Mort and colleagues at Columbia Teachers College conducted a number of studies investigating the factors influencing the innovativeness of schools. These studies were among the first diffusion studies in the field of education. Mort concluded that wealth and local control were key factors in school innovativeness (1973). He also suggested that educational innovations take quite a long time before they are fully adopted in education, possibly as long as one hundred years (Mort, 1973; Ready, 1992).

In contrast, Wollons (2000) studied the diffusion of the kindergarten movement around the world, noting the influence Froebel's pupils had in spreading the approach as a result of their adapting Kindergartens to conform to the various national and political values of adopting countries. She concluded that re-invention helped the approach spread quickly around the globe, suggesting worldwide diffusion occurred in about 50 years.

Carlson (1965) investigated the diffusion of the New Math approach through the social networks of school administrators in Pennsylvania and West Virginia between 1058 and 1963. Carlson's study pointed to the influence of a group of school

administrators (opinion leaders) who adopted New Math in their school districts in Allegheny County, Pennsylvania. He charted the approaches' diffusion using the S-curve and linked the social networking of participants and their perceived attributes of New Math to the rate of adoption of the approach, which eventually reached 100 percent in the area by the end of 1963. Carlson concluded New Math to be a successfully diffused innovation; however, by the end of the 1960s, New Math was anything but a success. By 1972, New Math had been declared a failure and federal funding of the project was ended.

Ready (1992) framed her case history regarding New Math's failure using diffusion theory and uncovered several factors leading to the demise of the approach. She used a variety of artifacts and data sources, such as newspaper articles and survey findings, to analyze the general public's perceived characteristics of the approach. And Ready found that, although proponents touted new math as having numerous advantages over traditional math approaches, most people rejected the approach because they found it difficult to understand and believed implementing the approach would necessitate a great deal of change. She also noted how growing Cold War fears in the U.S. at the time influenced people's negative perceptions of the approach.

Likewise, Williamson (2002) focused her dissertation study on the efforts of five teachers to diffuse a new instructional innovation and their adapting of their diffusion communication in order to increase the rate of adoption. She found that, in an effort to diffuse the innovation through professional development workshops, study participants often adapted their messages to fit the local cultures of the educators being trained in the innovation. In addition, the researcher highlighted the importance of the local network

and suggested local support was critical to the success of the innovation's diffusion and maintenance.

Kim (1984) extended diffusion of innovations theory into early childhood education by examining in her dissertation the feasibility of adapting a popular American children's television program (Sesame Street) in a Korean preschool. The researcher focused her investigation on 41 teachers' and principals' (participants') perceptions of the innovation (children's program) and focused on the five key attributes of diffusion theory in order to determine the feasibility of using the innovation. She concluded that adapting the program for the preschool's use was feasible based on participants' rating of the innovation as: (1) offering many relative advantages, (2) being easy to adapt, (3) being low in risk, and (4) being highly compatible with the needs of the school.

These studies show a variety of ways Roger's diffusion model has been used in educational studies. Carlson (1953), Ready (1992), and Williamson (2002), all highlight the important role of local social networks in the diffusion process, although Ready suggested a more locally focused study may be too limiting when considering the overall success of an innovation's diffusion.

These studies also demonstrate the flexibility of diffusion of innovation's theory and show that it is broad enough to be applicable to the particulars of this dissertation study and detailed enough to offer relevant insights regarding how REA as an innovation may be disseminating among teacher educators in higher education in South Carolina. These studies also underscore the usefulness of gathering data regarding participants' perceptions of the innovation's characteristics and the benefits of inquiring into participants' beliefs about re-inventing REA to better fit the context of South Carolina.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

Research Design

Prior to carrying out this study, the researcher obtained Approval and Exemption status from the Institutional Review Board of Clemson University to conduct this Internet-based survey and to collect data without having to obtain signed consent from participants first (Appendix A). To describe the diffusion of the Reggio Emilia Approach among early childhood teacher educators in South Carolina, this dissertation project employed a concurrent transformative mixed methods approach utilizing a cross-sectional digital survey and semi-structured interviews to collect data. Surveys are a popular and efficient method of data collection as they can be administered to a large population in a quick and cost effective manner (Fink, 2000 a; Creswell, 2003; Porter, 2004; Dillman, 2007). Self-administered, Web-based questionnaires offered several practical advantages over other survey methods. Andrews, Nonnecke, and Preece (2003) noted Web-based questionnaires were less costly, offered increased access to subjects and increased rates of return. In addition, the authors suggested self-administered surveys can decrease the likelihood of measurement error as data does not have to be transferred from paper-pencil instruments to computer-based analysis programs.

However there are a number of challenges and limitations associated with survey studies, and with Web-based designs in particular. First, Web-based surveys, though less costly to deliver, are expensive in terms of time and labor. Researchers must be well-equipped with the technological skills needed to develop and maintain a Web-based

survey (Umbach, 2004). In addition, there is an increase chance of sampling and coverage error occurring with Web-based projects if the target population does not have equal access to the technology needed to participate. In this study, it was assumed that the target population, teacher educators in higher education with posted school email accounts, had both the access and the skills needed to participate. As Couper (2000) noted, "For college populations, members of professional societies, and other specialized populations, Web surveys may be the ideal medium with few coverage and sampling problems" (p. 1). And because Web-based surveys are convenient for participants, they were considered the best method for assuring a high rate of response.

The Population

The study used a census rather than a random sample of the target population due to sampling and coverage issues; however, the use of a census rather than a sample prohibited generalizing findings from this study to other populations. Coverage problems resulting from "a mismatch between the target population and the frame population" (Umbach, 2004, p. 25) were addressed by delimiting the population to only those teacher educators who taught courses in early childhood education or related fields and who had posted email addresses in On-line faculty directories. The researcher consulted several reliable sources in order to build the census frame, including faculty directories posted on individual school websites, the national On-line directory of early childhood teacher preparation institutions from the Council for Professional Recognition, the South Carolina Commission on Higher Education's On-line directory, the South Carolina Department of Education's website on institutions offering early childhood education programs, and school personnel at some individual schools. There were factors related to

sampling and coverage problems that were outside the control of the researcher. For one, all post-secondary institutions in South Carolina that offer programs in early childhood education do not departmentalize faculty by specialty areas such as early childhood education. Faculty members in many institutions are not identified by their employing institution as "early childhood" faculty or as faculty in early childhood education departments. And because schools of education do not all departmentalize, some teacher educators who teach early childhood courses do not consider themselves to be "early childhood teacher educators" even though they meet the criteria for inclusion in the target population (i.e., they teach core courses in early childhood education, child development, or related programs to students majoring in early childhood education or related fields). Furthermore, a number of schools, particularly small ones, rely on adjunct and visiting instructors to teach early childhood education courses. Many adjunct and visiting instructors are not listed in faculty directories or given school email accounts. Therefore, the researcher created a database that included the names and email addresses of all teacher educators identified on official school websites as early childhood educators or teacher educators in early childhood/elementary education departments. Schools that did not have faculty clearly identified as early childhood teacher educators were contacted by telephone in order to better identify faculty who taught core early childhood education courses. Personnel at two schools refused to give any information about faculty to the researcher.

The greatest challenge to this project, as with any survey project, was low response rate and nonresponse bias. The response rate in this survey study was about 45%, which was lower than the 50% Babbie (1990) concluded was necessary for

adequate analysis and reporting. Findings in this study, therefore, could not be deemed as representative of the population. Survey research experts have found a number of factors contribute to low response rates, including poor survey design, ineffective contact methods, bad timing, survey salience, and coverage and sampling problems (Babbie, 1990; Fowler, 2002; Thomas, 2004, Dillman, 2007). Nonresponse bias, which occurs when only a nonrepresentative few respond to a survey (Salant & Dillman, 1994), is particularly problematic in Web-based surveys (Umbach, 2004). Porter (2004 a) observed that survey response rates have been steadily declining over the past twenty years, and Lodico, Spaulding, and Voegtle (2006) suggested "response rates between 30% and 50% are typical" (p. 171).

Procedures

The researcher employed recommended, research-based survey design and contact procedures in order to increase response rates in this study. According to Umbach (2004), best practices in Web-based survey design for preventing low response rate include: (1) keeping surveys brief; (2) including clear directions explaining how to respond to items; (3) using simple response formats similar to what is used in paper-pencil surveys; (4) limiting sentence and line lengths; and (5) avoiding easily skipped or confusing response formats such as drop down boxes. Further, Couper (2000) recommended dividing longer surveys (more than 20 questions) into sections and creating an interesting and inviting welcome page at the start of a digital survey. Dillman (2007) also recommended limiting questions that ask about sensitive issues, embedding meaningful and relevant images in the survey, and limiting the use of color.

In addition, Dillman (2007), one of the most widely cited sources in survey research, advised that the following procedures were essential for preventing low response in digital survey projects: (1) sending personalized pre-notification notices via postal mail to prevent email messages from being disregarded; (2) sending brief, but personalized invitation letters via email; (3) avoiding mass mailings; and (4) sending multiple reminder notices at regular intervals; and (5) designing user-friendly survey instruments. He also suggested "token prepaid financial incentives" can greatly increase participation (p. 153).

In this study, a commercial On-line survey service was employed, which allowed the researcher to create and upload the digital questionnaire as well as collect and store the survey data. The commercial survey service provided the researcher with a number of professional design tools and features that allowed an image to be embedded in the survey, the use of subtle color schemes to clarify response formats, and the use of branch logic and skip patterns that made it easier for respondents to navigate through the survey. All of these features were mentioned by Dillman as factors that influence higher response rates (Dillman, 2007).

In addition, the digital questionnaire had varying response formats including open-text, matrix tables, and radio buttons and text boxes for "other" responses. The digital questionnaire allowed participants to stop and return to the survey at their convenience but blocked them from taking the survey more than once. The questionnaire was of moderate length, with 47 items total, which were aggregated into five sections. Each section provided instructions about key terms and upcoming questions (Appendix B). Only one question requested information that could be considered sensitive or highly

personal, that being the item about annual yearly income; therefore, that item was placed at the end of the survey to prevent drop outs from occurring early on in the survey (Dillman, 2000; Umbach, 2002). The commercial survey program also collected and kept count of survey returns and allowed the researcher to continuously review the data throughout the collection process. Participant responses were coded with program-given identification numbers and no email addresses or other identifying information about participants was collected to assure confidentiality. Survey respondents remained anonymous to the researcher throughout the study.

The researcher also followed Dillman's (2007) recommended contact procedures. Forty-five letters of introduction to the study were sent via postal mail to deans or department chairs of education at each postsecondary institution identified by the South Carolina Commission of Higher Education (SCCHE) as having an early childhood education or closely related program (Appendix C). The introductory letters set out the purpose of the research, the sponsoring university, and participants' rights (Appendix E). The letter asked for the deans' and department chairs' help in informing faculty about the upcoming email notification. None of the introductory letters were returned as undelivered. Approximately one week after the introductory letters to deans and department chairs were sent, a personalized, email invitation was sent to 126 ECE teacher educators on the census frame (Appendix F). The emailed invitations included an embedded link to the survey and set out the study's purpose, participants' confidentiality and participation rights. An additional 30 email invitations were sent in following weeks as additional participants were located as a result of ongoing conversations with early childhood educators and school personnel at individual institutions. In total, 156 ECE

teacher educators were invited to participate and sent email invitation letters and follow-up reminder letters were sent out each week for six weeks after sending the initial invitations.

Incentives were not offered in this study although Dillman (2007) suggested the use of incentives increases response rates. The researcher also contacted 30 teacher educators whose names appeared on the census frame via telephone to encourage participation and it was through telephone conversations that many invitation and reminder emails were not received by many invitees. It was revealed that numerous invitation emails were filtered due to the embedded linked, which trigged host servers' SPAM mail blockers to delete or re-route emails. In some cases, numerous attempts to send the survey link to participants were unsuccessful and the researcher had to provide the URL to participants via telephone. The researcher then purchased a webpage and domain name that could be easily communicated over the telephone (www.reggiosurvey.com) and in subsequent telephone conversations referred participants to this site, which was seamlessly linked them to the survey site. The researcher did not subscribe the domain name or webpage to search engines to avoid non-members from finding and participating in the survey. After six weeks, the survey was closed and data from stored on the On-line system downloaded to the researcher's computer and converted to SPSS and Word document files.

Mixed Methods Research

Although still emerging in the educational research literature, studies utilizing mixed methods are growing in popularity (Tashakkori & Teddlie, 2003). Creswell, Clark, Gutmann, and Hanson (2003) defined a mixed method approach as one that:

> ….involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research. (p. 212)

Creswell (2003) cited Campbell and Fisk as among the first to mix methods within a single research design in their 1959 study of psychological traits. Since then, the use of mixed method studies has increased because they offer advantages over single-method designs. In particular, weaknesses inherent in single methods can be offset by using different kinds of data and by triangulating among various data sources (Creswell, 2003). The choice of a mixed method approach for this study was deemed appropriate based on the purpose and objectives of the study. The first objective was to describe the knowledge, experiences, and use of REA among participants, and data to address meet this objective was obtainable through quantitative survey methods. The second objective was to explore participants' perceptions of REA and their motivations for adopting or rejecting the innovation, and qualitative methods were deemed to be more appropriate for addressing this objective. The dominant approach in this study was quantitative through the collection and analysis of numeric data using the digital questionnaire. This data provided a broad overview of the diffusion of REA among members of the target population. Quantitative data alone, however, could not address participants' perceptions of the innovation or probe their motivations and attitudes; therefore, qualitative data from open-ended response items embedded in the survey along with semi-structured interviews with a sample of respondents were included to fully address the research questions and

second study objectives. Interview participants were purposively sampled from survey participants using a maximum variation sampling strategy (Patton, 1990). Quantitative and qualitative data were integrated during the data collection stage by combining both open-ended and fixed-choice questions in the survey instrument and interviews were conducted at the same time survey data was being collected. Both data types were also integrated in the interpretation stage to address the survey questions and provide a "richer explanation" of the findings (Morse, 2003, p. 193).

Mixed Methods Design and Visual Model

The mixed method design employed in this study was a concurrent transformative strategy with features of a nested approach (Creswell, 2003; Johnson & Turner, 2003). As in nested mixed methods designs, both data types were simultaneously collected. The design was transformative in that all phases of the research process were framed in Rogers' (2003) diffusion of innovation theory (Johnson & Turner, 2003; Creswell, 2003). Figure 2 set out design framework and process in a graphic representation and shows the dominant data collection strategy as quantitative, signified by the capital letters, and that the qualitative strategy was secondary in that data from qualitative methods was used to inform the quantitative data.

A concurrent transformative strategy offered a number of advantages over an exclusively quantitative or qualitative design or other types of mixed methods approaches. First, by embedding open-response items in the survey instrument, the researcher was able to collect broad and more detailed information about participants' knowledge and use of REA. The qualitative data allowed participants a stronger voice in

the research process as well as greater opportunities to explain and clarify their responses. Participants' perceptions, motivations, and experiences could not be captured with fixed-choice responses alone. The qualitative data also helped inform the researcher about participants' interpretations of certain terms and major constructs included on the questionnaire, and revealed additional limitations of the survey instrument.

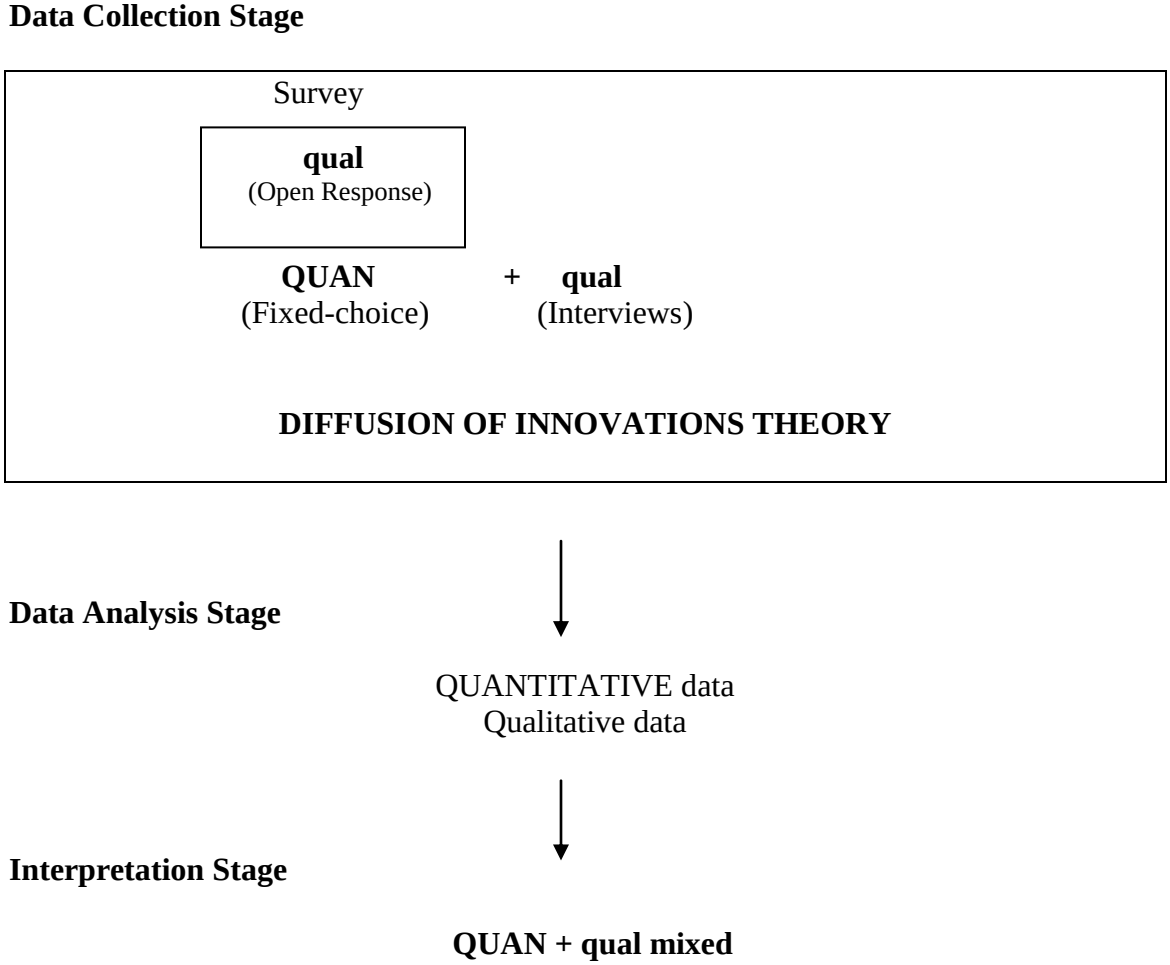

Figure 2. Graphic Representation of Concurrent Transformative Mixed Methods Design

Data Collection

Quantitative Strategies

The majority of the survey items were forced-choice-response items, and data from these items were analyzed using descriptive statistics (frequency distributions and percentages). Participants' personal and employment characteristics were considered variables in their decisions to adopt or reject the innovation, and statistical analysis was used to address the third research question and describe the relationships between variables using a Chi-square test of independence

Survey Instrument

The main study questionnaire consisted of 41 numbered items or 49 total items when including the "other" open-text responses as individual items. The questionnaire was set out in five sections (Appendix B). The instrument was developed from the framework of Rogers' (2003) diffusion of innovation theory, and the researcher consulted the literature for previously published instruments as guidance. However, no survey studies utilizing diffusion of innovation theory and measuring the diffusion of a theory-based innovation was located in the literature. The researcher consulted other published instruments that collected data regarding the diffusion of technology tools using the frame of diffusion of innovation theory (2003) to guide the development of the instrument (Moore & Benbasat, 1991; Surry & Farquhar, 1997). Survey items were aligned with the key constructs from diffusion theory that were addressed in this study to better clarify and direct the data collection process (Appendix C).

Section I of the questionnaire consisted of three items about participants' ECE programs and employing institutions. The first item on the instrument was a filter question that asked participants to identify the number of early childhood education

courses they taught per year. Any participant who answered the filter question with "I don't teach any early childhood courses" was diverted to the final page of the survey and thanked for their participation. The filter question allowed the researcher to prevent those not in the target population from participating in the study. Those who stated they did not currently teach ECE courses but had in the recent past were allowed to continue with the survey.

Section II of the survey included nine items asking participants to report their knowledge, use, and professional development experiences in REA. Data from these items were used to address the first research question: "Is REA diffusing among ECE teacher educators in SC and, if so, how is it diffusing (at what rate)?" along with the three subquestions, "What do ECE teacher educators in SC know about REA?" "How have ECE teacher educators in SC come to learn about REA?" and "What professional development activities about REA have ECE teacher educators in SC participated in?" One item in this section asked participants to self-report their knowledge of REA. The responses reflected the five stages of Rogers' (2003) innovation-decision process:

1. Stage One - Knowledge: "when an individual is first exposed to an innovation's existence and gains an understanding of how it functions" (Rogers, 2003, p. 169);
2. Stage Two - Persuasion: "when an individual forms a favorable or unfavorable attitude towards the innovation" (Rogers, 2003, p. 174);
3. Stage Three - Decision: "when an individual engages in activities that lead to a choice to adopt or reject the innovation" (Rogers, 2003, p. 177);

4. Stage Four - Implementation: “when an individual puts a new idea into use” (Rogers, 2003, p. 179); and,
5. Stage Five - Confirmation: “when an individual seeks reinforcement of a decision already made” (Rogers, 2003, p. 169), although the decision may be reversed “if exposed to conflicting messages about the innovation.” (p. 169).

An open-ended question was also embedded in this Section that asked about participants’ knowledge of the approach. The open-ended question asked participants to describe or define REA based on their current level of knowledge and was included to help clarify, compare, and expand upon the fixed-choice response to the above item.

Another item in this section asked participants to identify the communication channel(s) through which they first came to learn about REA. The channel of communication is a key component of Rogers’ (2003) diffusion of innovation’s theory. The remaining items in this section asked participants to identify their professional development activities in REA, such as conferences attended, courses taken, study tours participated in, presentations given, and articles written about REA.

Section III of the survey asked participants to describe their use of REA in their work in teacher/caregiver education programs in South Carolina. These items were developed to address the second research question guiding the study, “How do ECE teacher educators use REA in their work in teacher/caregiver education programs in South Carolina?” and the two subquestions 2 (a) “What reasons do teacher educators in SC give for using, rejecting, or discontinuing their use of REA in their work?” and 2 (b) “What elements of REA do ECE teacher educators report as being relevant or irrelevant

to their work?" Five open-response items were also included to address subquestion 2(b) and to allow participants to expound upon their use of REA.

Section IV of the survey included 12 scale items to collect data about participants' perceptions of the attributes of the REA, which were based on Rogers' (2003) theory and scale items included in a study conducted by Moore and Benbasat (1991). Rogers (2003) found five attributes were highly associated with the adoption of an innovation, namely: relative advantage, complexity, trialability, compatibility, and observability. The scale items asked participants to rate their level of agreement or disagreement with statements describing REA using a seven-choice Likert-type scale. Possible responses ranged from completely agree, strongly agree, agree, disagree, strongly disagree, or completely disagree, and included a neither-agree-nor-disagree response choice. These scale items were included to address subquestions (1.d.) "How do ECE teacher educators' perceive REA in light of Rogers' (2003) diffusion of innovations' theory (i.e., relative advantage, image, trialability, complexity, voluntariness, observability, results demonstrability)?" and were based on items included in a validated instrument developed by Moore and Benbasat (1991).

Moore and Benbasat's developed an instrument to measure the perceptions of those considering adopting a computer workstation for use in their work. The 38-item instrument the researchers developed comprised eight scales created from a set of existing scale items identified from the literature on diffusion of technology innovations. However, the authors differed from Rogers' original diffusion model in that they included items designed to measure individuals' perceptions of using an innovation rather than their perceptions of the innovation itself. Moore and Benbasat (1991) included

separate items to measure the construct of *image* or "the degree to which an innovation is perceived to enhance an individual's status in [an] organization" (Rogers, 2003, p.224), which was originally noted by Rogers as one of several different relative advantages. Moore and Benbasat concluded *image* should be a separate construct based on their own work and work done by Tornatzky and Klein (1982) as well as Rogers' (1982) own explanations in his book that image is an important motivator for adopting an innovation. Therefore, two items reflecting the construct of "image" were included in this study's pilot instrument. Moore and Benbasat (1991) also included items to measure the construct of perceived *voluntariness*, which they defined as "the degree to which the use of the innovation is perceived as being voluntary or of free will" (p. 195). The researchers explained the need for diffusion researchers to include items asking participants to identify the degree to which they are free to implement personal adoption or rejection decisions, an attribute most studies simply assume. Therefore, two items were included in the pilot instrument in this study to measure voluntariness and the amount of freedom participants' had to adopt or reject the use of an innovation for use in their work. Moore and Benbasat (1991) subjected their items to three separate field tests, from which they developed both a 75-item long-scales and a 25-item short-scales instrument. The short scales instrument reported acceptable Cronbach's alpha coefficients, but the authors urged researchers to conduct their own reliability tests on items they developed based on their work. Seventeen scaled items were developed for this dissertation project based on Moore's and Benbasat's instrument and a pilot study conducted and Cronbach's alpha coefficient tests run for these scaled items.

Reliability and Validity (Pilot Study)

Twelve in-state and out-of-state ECE teacher educators and graduate teaching assistants in early childhood education doctoral programs were invited to pilot the survey and provide feedback on wording, formatting, and directions (Fowler, 2002). However, only six participants piloted the survey and provided feedback and only five completed all the survey items. Thomas (2004) suggested between 10 and 30 people not part of the target population should be included in the pilot study, but few participants not in the target population were accessible to the researcher. Thomas (2004) also suggested that someone from the sponsoring organization should be included in the field test of the survey instrument, and in this study's pilot project, an expert in survey research along with a teacher educator both employed by the sponsoring university reviewed the pilot survey items and provided extensive feedback and recommendations for changes.

Pilot participants provided verbal feedback to the researcher via telephone conversations as well as written feedback through comment boxes embedded in the pilot questionnaire as well as in follow-up feedback forms created by the researcher (Appendix G). Pilot participations recommended reordering and combining items in the first and last sections of the questionnaire. Further, four participants responded to a set of directions in one section of the pilot questionnaire as if the directions were a question. The directions explained that upcoming questions would ask participants about their knowledge of the Reggio Approach, to which four participants responded with their own definitions of the REA. It was determined that these responses provided useful data with regard to participant's level of knowledge of REA and such information could be used to triangulate the other item in the questionnaire that asked participants to describe their

knowledge of the innovation via fixed-choice responses. Therefore, an open-ended question was included in the final questionnaire that asked participants to describe or define the Reggio Approach using their own words. Adding this open-ended item allowed participants' a greater voice in explaining their knowledge of the innovation and a way to triangulate fixed-choice response.

The pilot data was downloaded, converted to both WORD and SPSS files, and analyzed. The internal consistency of the scale items was determined using Cronbach's alpha coefficients tests, which are commonly used to describe how consistently multiple items measure one-dimensional constructs and how items on an instrument relate to each other and the total instrument (Nardi, 2003; Trochim, 2001). A low Cronbach's alpha suggests a low degree of inter-item correlation, meaning the items do not measure the same underlying construct; whereas a high alpha suggests items have a high inter-item correlation and that they measure the same underlying construct (Trochim, 2001). An alpha score above .70 is considered acceptable, although low alpha values are not unusual with scales having fewer than ten items. (Thomas, 2004).

As only 5 pilot participants responded to the scaled items, findings from the reliability analyses were limited. The overall scale showed good internal consistency with a reported Cronbach's alpha coefficient of 0.961. Table 1 shows the results of the individual item analyses, and those items reporting low alpha coefficients were considered unusable. The items measuring relative advantages (2 items), compatibility (4 items), complexity (2 items), observability/results demonstrability (3 items), and trialability (2 items) all showed Cronbach's alpha coefficients of .80 or better. However, the two items measuring image reported a low Cronbach's alpha of 0.552, and the two

items measuring voluntariness reported an even lower Cronbach's alpha of 0.337. All four of these items were removed from the main study analysis because they were deemed to be unreliable. One of the three items measuring the construct of observability was also removed to raise the alpha coefficient to .989 and strengthen the reliability of the scale for those items. The two items measuring relative advantage were presumed to be identical with a reported Cronbach's alpha coefficient of 1.0 but were not removed.

Table 1.

Cronbach's Alpha Coefficients for Pilot Survey Scaled Items

Construct	Number of Items	Item Numbers	Alpha
Relative Advantage	2	27, 29	1.0
Compatibility	4	20, 21, 23, 24	.943
Complexity	2	31, 36	.809
Observability & Results	3	22, 28	.832
Demonstrability		34	.989[a]
Image	2	26, 30	.522
Trialability	2	32, 35	.817
Voluntariness	2	25, 33	.377

[a]Cronbach's Alpha if item 34 removed

A professor and expert in survey research methods who was employed at the researcher's sponsoring university reviewed the survey items and provided technical assistance with regard to the wording of survey items. However, no expert in diffusion theory reviewed the instrument, which limited content validity and compromised the strength of the research findings. Further, no survey instruments measuring theory-based innovations from the frame of diffusion of innovations was located. Several other

surveys published in journals and dissertations investigating the diffusion of innovations in education settings using Rogers' (2003) diffusion of innovations theory were consulted, but these published instruments related to the use of technology tools and not theory-based approaches similar to REA (Warford, 2005; Sahin & Thompson, 2006).

According to Thomas (2004), "Content validity evidence focuses on the judgment of experts about the degree to which each question links to the objectives and overall whether the questions linked to an objective sufficiently cover that objective to yield meaningful information" (p. 81). Rogers' theory served as a guide in the development of the instrument and as a frame of reference for interpreting study findings.

Qualitative Strategies

Open-Response Items

Seven open-ended response items were included in the survey. Item 6 asked all participants to describe/define the approach in their own words. Item 9 asked only those participants who reported they used the approach to describe what originally prompted them to use the approach. Item 12 asked only those participants who reported they used the approach in their work to describe/ how they used the approach in their work. Item 13(a) asked only those participants who responded in item 13 that some elements of REA were more relevant than others to describe/list those relevant elements. Item 14(a) asked only those participants who responded in item 14 they felt some elements of REA were irrelevant to describe/list those irrelevant elements. Item 15(a) asked only those participants who reported in item 15 they decided against using the approach or discontinued using it in their work to describe what prompted them to not use or discontinuing using REA in their work, and Item 16 asked all participants to describe

what, if anything, they felt was needed to help them better understand or utilize the approach in their work.

Semi-Structured Interviews

Data was also collected through the use of telephone interviews conducted with volunteer early childhood teacher educators recruited as a result of contacting survey participants responding to a request for interviews posted at the end of the online questionnaire and from techniques to locate other interview candidates. Telephone interviews were conducted with eight survey participants while survey data was being collected, and a semi-structured or interview-guide approach was utilized. As with more structured interview methods, the semi-structured interview or interview guide approach (Patton, 1990) made use of a scripted protocol that set out for the pre-specified topics to be covered with all interviewees and the questions to be asked during the interviews. The semi-structured approach, however, allowed the interviewer to reword or reorder questions as needed (Patton, 1990).

Interview Sampling Strategy

Maximum variation sampling was used to select eight diverse survey participants for interviews. The eight participants represented different levels of knowledge and adoption stages of the innovation as well as different types of post-secondary institutions in different regions of South Carolina. Data collected through maximum variation sampling was useful for identifying and understanding shared themes, motivations, concerns, attitudes, and experiences with REA that across a range of diversity among participants (Patton, 1990). The first two interview participants were identified through snowball conversations with early childhood teacher educators and chosen because they

were suggested as being very knowledgeable about REA but with differing attitudes about it: one enthusiastically embraced the approach and the other expressed strong doubts about its use and was more critical of it. The researcher contacted these participants to request an interview. The six remaining interview participants were located as a result of contacts with survey participants who responded to the request for an interview included at the end of the survey. The researcher contacted each survey participant prior to conducting interviews to see if they had completed the online survey and if they met the other criteria of maximum variation needed for this study.

Of the total interview sample, two participants were associated with two-year technical colleges, three were associated with public, four-year institutions, one was associated with a four-year public, Historically Black institution, and one was associated with a private, four-year, faith-based institution. In addition, two participants were located in the upstate or northern, piedmont region of the state, two were in the coastal region, two were located in the largest urban area in the state located in the midlands region, and two were in mid-sized urban communities in the midland of the state.

An interview protocol was developed from the survey questions and based on diffusion of innovation theory (Appendix H). Preliminary questions in the interview protocol expanded upon items 9, 17, 21, and 22 in the survey and allowed the researcher to identify interviewees' level of knowledge of REA, their professional development experiences with REA, and information about how they used the approach and what, if anything, they felt was needed to further understand or use it in their work. The remaining interview protocol questions were open-ended and designed to probe

interviewees' perceptions of REA and their motivations for using or not using the innovation in their work.

Data Analysis

Quantitative Strategies

Data from forced-choice responses to digital survey instrument was collected and stored using a commercial online survey service and later converted into SPSS files for follow-up statistical analysis. The software program SPSS was used to analyze, sum, and calculate percentages and to test for relationships among variables in data sets created from response items.

To address the first research question regarding the diffusion of REA among ECE teacher educators in SC, the researcher first analyzed data collected to address subquestion 1(a) relating to participants' knowledge and use of REA (items 4 and 8). Data collected from these two survey items was organized into frequency tables and percentages calculated to describe participants' responses to these two items. Further, participants' demographic characteristics in relation to their reported knowledge and use were organized into frequency tables and percentages in order to more fully compare participants by knowledge levels. In addition, one item on the survey (item 10) collected data on the number of years (in ranges) that participants implemented REA in their work. The cumulative number of participants who implemented REA over the time periods listed in item 10 was then plotted on a line graph to describe the possible diffusion of the innovation in relation to Rogers' S-shaped diffusion curve.

To address subquestion 1(b) about the communication channels through which REA may, one item (item 5) was analyzed and participants' responses organized into

frequency tables and percentages to describe the most employed communication channels reported by participants. And to address subquestion 1(c) about participants' professional development activities, 6 items (items 6-11) on the survey instrument were analyzed regarding the numbers of conferences, courses, and study tours about REA taken as well as the numbers of presentations made, courses taught, and publications authored about REA. The data collected from the six items were organized into frequency tables, and percentages calculated to describe the data. Further, data about professional development activities were sorted by knowledge and adoption groups and reported in frequency tables.

To address subquestion 1(d) about participants' perceptions of the traits of REA (relative advantages, compatibility, complexity, trialability, and observability/results demonstrability), 12 scaled items (items 24-36) were analyzed. Data from the scaled items were analyzed and reported in frequency tables and percentages. Data from the scaled items were also reported by adoption groups in frequency tables and percentages.

To address the second research questions, one item (item 15) on the survey collected data about the types of courses in which participants included REA. Data from this item was analyzed and reported in a frequency distribution table. No other quantitative data was analyzed to address study question 2 or 2(a). To address study question 2(b) regarding the elements of REA participants perceived as relevant and irrelevant, two items on the survey instrument (items 17 and 19) were analyzed and reported in frequency distribution tables. And to address the third and final research question, the researcher sorted participants into two groups, adopters (those who reported they used REA) and nonadopters (those who reported they did not use REA). Chi-square

tests of independence were run for adoption groups on a number of variables, including gender, age, annual income, type of employing institution, job position, years of teaching, and professional development activities were calculated with chi-square test. According to Parker (1997), "Chi-square is the only significance test available for data with both variables measured on the nominal scale. However, data measured on the ordinal and interval scale, organized into categories and presented in a contingency table can also use a chi-square" (p. 167). The established confidence interval of 95 percent with an alpha of .05 was used, and an analysis was run for each of the two groups: adopters of REA or those who identified themselves as using REA in their work, and non-adopters, those who identified themselves as not using REA or discontinuing use of REA in their work.

Qualitative Strategies

Open-Response Items

A transformative strategy was used to analyze the seven open-response items embedded in the digital questionnaire. The analysis strategy was transformative in that text was analyzed from the perspective of diffusion theory as well as REA. Qualitative data provided a broader and deeper picture of the diffusion process among participants and also provided participants a greater voice in the research process. In addition, qualitative data provided insights on participants' motivations and attitudes that could not be addressed by quantitative data alone.

To analyze the text, the researcher read and reread the data until patterns and themes emerged from the text. From these patterns and themes, categories were developed, which were based on diffusion of innovation theory and, when appropriate, REA. The researcher reported the most frequently mentioned categories and used

participants' written words to support the findings. The process of analysis was also made visible and charts and tables showing the meaning statements, paraphrasing, and category development through identification of recurring words, patterns, and themes. Tabulation tables showing how the researcher counted frequencies reported in analysis were also created.

Interview Data

As suggested by Morse (2003), interview data was collected using semi-structured interview strategies and used to "illuminate" quantitative results (p. 195). Interviews were conducted via telephone and recorded using a portable digital recorder. The digital audio files were transcribed by the researcher using a digital transcription software package and the text saved in a WORD file. A transcript was printed and reviewed by the researcher for typographical errors, corrections made, and a copy of the transcript was sent to each interviewee via email requesting their review and clarification.

Six interviewees returned transcripts with editing suggestions, most minor, such as a change in the spelling of names, places, and organizations discussed in the interview. Major changes were made to one interview transcript in which the participant made partial sentences into complete sentences and removed irrelevant elements such as *see, well,* and *you know*.

Interview data was used to address all the research questions and subquestions with the exception of question 3. Interview participants were first sorted into two groups, adopters and nonadopters, based on their reported use of REA and text was analyzed according to the needs of the research questions.

Data integration occurred not only at the collection stage, but also at the interpretation stage. Quantitative and qualitative data were analyzed separately and integrated during the interpretation stage.

Context of the Researcher

As Marshall and Rossman (1995) explained, qualitative data analysis is more flexible and open than quantitative analysis, necessitating researchers report not only the procedures they used but also how they conceptualized and framed their approach to data analysis. According to Miles and Huberman (1984) and others, rigorous qualitative data analysis requires that researchers first position themselves within the context of the study and bracket any personal biases, preconceptions, experiences, and notions used to view the data (Flick, 2002; Patton, 1990).

The researcher in this study was an early childhood teacher educator working in a private, faith-based postsecondary institution in South Carolina. As a member of the target population, the researcher had knowledge of culture of the social system and was personally acquainted with some of the survey and interview participants in this study. The researcher also spent much of her professional career studying and utilizing aspects of REA in her own work with young children and prospective early childhood educators. The researcher completed two graduate courses in REA and, over the course of ten years as a public school kindergarten teacher and college-level instructor she included the innovation in her own work. She participated in a number of professional development experiences regarding REA, co-presented workshops about REA, and participated in a study tour to Reggio Emilia, Italy. The researcher's knowledge and adoption of the approach made pro-innovation bias a constant threat to this study, particularly during the

interview collection phase. According to Rogers (2003), pro-innovation bias is the "the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that is should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected" (p. 100). In order to control for pro-innovation bias, the researcher created an interview protocol to help her capture participants' ideas and reasons for rejecting or adopting the innovation and to explore participants' beliefs about the difficulties, drawbacks, and challenges associated with REA. However, the researcher's knowledge and training in ECE in South Carolina also made her more aware of the ideas, issues, and concerns expressed by participants.

Philosophical Approach to Qualitative Analysis

No one philosophical orientation drove the research process in this study (Creswell, 2003; Patton, 1990; Tashakkori & Teddlie, 2003). Instead, the researcher relied on the diffusion of innovation theory and REA to frame the study. Further, the researcher adopted a pragmatic "what works" approach for choosing methods and strategies to address the research questions (Creswell, 2003, p. 12) and apply certain pragmatic assumptions to guide the choice of methods and strategies. For example, the researcher assumed that participants had particular motivations and reasons for learning about, considering, adopting, or rejecting the use of REA and that these motivations were strongly influenced by the social contexts participants shared, including: (1) the theoretical traditions and historical roots of the field of early childhood education included in their professional education and development; (2) the various networks of people, customary practices of early care and education, and the ECE settings in which they worked, and (3) the sociopolitical norms, values, and belief systems rooted in the

regions of South Carolina in which they lived. The researcher also assumed these shared contexts strongly influenced participants' perceptions of the various attributes of REA, including its compatibility with their own values and needs, and the relative advantage it may have afforded them. It was also assumed that participants were motivated to consider the innovation from the standpoint of their own needs, problems and questions arising from each individual's unique life and work experiences. Data collection strategies were aimed at probing those needs, problems, questions, and motivations.

CHAPTER FOUR

RESULTS

Overview

In this section, findings from the analyses of both quantitative and qualitative data are reported. First, a discussion of the response rate appears followed by a review of the demographic data collected from survey participants. After that, each survey question and related subquestions are addressed first with quantitative findings from the survey questionnaire, followed by qualitative findings from the open-response items and interview data. As stated in chapters one and three, the purpose of this study was to examine and describe the diffusion of the Reggio Emilia Approach (REA) among early childhood teacher educators in South Carolina. Findings from the quantitative analysis were used to address the main study question, Question 1, and findings from qualitative analyses were used to inform and expand upon the quantitative findings. Question 3 was addressed only with quantitative data and subquestion 2(b) was addressed with only qualitative data.

Survey data was collected and stored through an Online, commercial survey service and later downloaded to the researcher's computer and converted into SPSS files for follow-up statistical analysis using SPSS. Open-response text was also collected and through the Online, commercial survey program and later downloaded by the researcher and converted into Microsoft WORD files. The interview data was recorded using digital audio recording and audio files were downloaded by the researcher, transcribed and stored on the researcher's computer. Interview participants were sent a copy of the

transcript and given opportunities to provide feedback and changes as needed. Four participants sent back transcripts with suggestions for changes.

Response Rate

The Online, commercial survey service collected data from 53 completed digital questionnaires and 27 partially completed questionnaires. Responses from partially completed questionnaires were not included in the final analysis. Of the 53 completed questionnaires, two were deemed ineligible because respondents reported in the first filter question that they were not in the target population. Data from these questionnaires were also not included in the final analysis.

In total, there were 156 participant names and email addresses on the final census frame and 156 email invitation letters sent out. It was found that 40 email invitations were undeliverable or participants unreachable at the address contained on the census frame. The researcher received notification that 20 invitation email addresses contained fatal errors or emails were blocked by host servers' SPAM filters. Further, 20 addressees were found to be unreachable because it was later learned through conversations with participants and administrative personnel the 20 addressees had either retired, were out of the country, were on sabbatical leave, or were no longer employed at the schools where email invitations were been sent. Dillman's (1978) response rate formula was used to calculate the return rate as follows: Total number returned minus all ineligible addressees, divided by the total number of the census frame less ineligible and unreachable participants multiplied by 100.

The response rate was lower than the return rate of 50% Babbie (1990) suggested was needed for adequate analysis and reporting in mail survey studies. Six additional

completed surveys were needed to reach a return rate of 50% using the response rate formula. Subsequently, the researcher attempted to conduct a nonresponse bias check by contacting 15, randomly selected nonrespondents. The researcher attempted to contact nonrespondents via telephone and also sent a letter along with an abridged, paper survey and a self-addressed, stamped envelope. However, the researcher was not able to reach any of the nonrespondents by telephone, and only three nonrespondents sent returned paper surveys, too few for statistical analysis. However, a review of the 35 nonrespondents on the census frame showed 28 taught in 4-year institutions and eight in 2-year institutions; four were male and 31 were females. Of the three who returned paper surveys, two were from 4-year public institutions and one taught in a 2-year public institution. Two stated they were aware of or had knowledge of REA and did not include REA in their work, the other (non)respondent stated she had considerable knowledge of the approach and integrated REA throughout her work.

Demographics

Quantitative Survey Data

Eleven questions on the survey instrument collected information about participants' personal and professional demographic data. Findings are set out in Table 2. It was found that the majority of participants (N=51) were White females between 50-69 years of age with over 20 years of teaching experience, pre-K through college. Furthermore, most participants were fulltime faculty members, taught in 4-year institutions, had earned doctorates, and were associate/assistant professors or professors.

Table 2.

Participant Demographic Information (N=51)

	Frequency	Percent
Sex		
Male	2	3.9
Female	49	96.1
Age		
30-39	9	17.6
40-49	9	17.6
50-59	24	47.1
60 and older	9	17.0
Racial Identity		
African American	5	9.8
White, non-Hispanic	46	90.2
Annual household income		
$<20,000 to $40,000	2	3.9
$40,001 to $60,000	11	21.6
$60,001 to $80,000	14	27.5
$80,001 to $100,000	7	13.7
$100,001 or more	13	25.0
Missing	4	7.8
Years Teaching Experience		
1 – 10 years	8	15.7
11 - 20 years	18	35.3
More Than 20 years	23	45.1
*Missing	2	3.9
Highest Level of Education		
Bachelor's degree	1	2.0
Master's degree	21	41.2
Education Specialist degree	1	2.0
Doctorate	28	54.9
Adjunct/Itinerant/Lecturer/Inst.	7	13.7
Clinical Faculty	1	2.0
Associate/Assistant Professor	21	41.1
Professor	9	17.7
Other	5	9.8

Table 2 (Continued).

Participant Demographic Information (N=51)

	Frequency	Percent
Number of ECE Courses/Year		
None (currently)	4	7.8
1-3	18	35.3
4-6	18	35.3
7-10 or more	11	21.6
Employing Institution		
4-yr public/research	21	41.1
4-yr private/research	8	15.6
4-yr private, faith-based	5	9.8
4-yr private HBCU	1	2.0
4-yr research[a]	1	2.0
All 4-yr institutions	**36**	**70.5**
2-yr public tech/community	14	27.5
2-yr private tech/community	1	2.0
All 2-yr institutions	**15**	**29.5**

[a]Participant did not identify institution as public or private

In addition, participants were asked to identify the number of ECE courses and the degree programs that required their courses (Table 3). There was a wide variety of program types and combinations of types reported because participants could choose all that applied from a list that included graduate programs, Bachelor's and Associate's degree programs, certificate and professional development programs and "other" types of programs. Much overlap was expected, making it difficult to report percentages in a meaningful way. It was found that 28 participants taught in more than more than one type of program. Further, two participants noted they taught in "other" types of programs, which they listed as "teacher cadet program, not required" and "ECE development diploma."

Table 3.

Frequency Distribution of Program Types (N=51)

Program Types[a]	Frequency
Graduate	17
Bachelor's	30
Associate's	17
Certificate	17
Professional Development	6
Other[b]	2

[a]28 participants taught ECE courses in more than one type of program [b]Teacher Cadet, Early Childhood Development diploma

Qualitative Interview Data

The eight interview participants were given pseudonyms for reporting purposes and are identified in this section as Darla, Alison, Judy, Ben, Barbara, Fran, Mary, and Rhonda. Darla and Rhonda both taught in 2-year, public institutions. The other six interview participants taught in 4-year public and private institutions. Alison taught in a 4-year, private, faith-based institution in a metropolitan area in the Upstate; Fran taught in a 4-year, public, HBCU in a rural area in the Midlands; Ben and Barbara both taught in the same, 4-year, public institution in an urban area in the Midlands; and Mary taught in 4-year public institution in a mid-sized metropolitan area in the Midlands. Judy also taught in a 4-year public institution in an urban area on the Coast.

Research Question One and Subquestions

To address the first research question (To what extent is REA diffusing among ECE teacher educators in SC?), subquestion 1(a) had to be addressed first and data regarding participants' reported knowledge and use of the innovation had to be analyzed. In keeping with Rogers (2003) diffusion of innovation's theory, the key variable for describing the diffusion of REA was not participants' knowledge of the innovation, but their reported use of it. Therefore, question 1(a) collected data not only on participants' reported knowledge of the approach, but, more importantly, on their reported use of the approach. Survey item six asked participants to report their use of REA in one of five ways (see survey item 6 in Appendix B). The responses were then used to sort participants into two groups: adopters (those who reported they used/included REA in their work) and nonadopters (those who reported they did not use/include REA in their work).

Quantitative Survey Data

Self-Reported Knowledge

As shown in Table 5, 96% all participants (N=51) reported having some amount of knowledge of REA and only two reported having never heard of REA. In addition, 13 participants said they had considerable knowledge of REA. The mean for this item was 3.58, the standard deviation 1.11, and the variance 1.12.

Table 4.

Frequency Distribution of Self-Reported Knowledge of REA

		Frequency	Percent
Levels of Knowledge			
1.	Never heard of REA	2	3.9
2.	Aware of REA but know very little about it	3	5.9
3.	Know about the REA	22	43.1
4.	Very familiar with REA	11	21.6
5.	Considerable knowledge about REA	13	25.5
	Total	51	1

Knowledge of REA by Institution Type

To better describe participants' knowledge in relation to the types of institutions a frequency distribution table was created (Table 5). The two participants who stated they never heard of REA both taught in 4-year, private, faith-based institutions and of the three participants who reported being only aware of REA, two of these participants taught in 4-year public/research-based institutions and one taught in a 2-year private technical institution. The researcher further aggregated institution types into just two groups; 2-year and 4-year institutions to review knowledge levels across just these two groups and found the groups were very close proportionally regarding knowledge of REA.

Table 5.

Levels of Knowledge by Institution Types

	Never Heard of REA	Aware of REA	Know about REA	Very Familiar w/REA	Considerable Knowledge of REA	Row Totals
Institution Types						
4-yr public	`0	2	7	5	7	21
4-yr private	0	0	5	3	0	8
Faith-based	2	0	3	0	0	5
HBCU	0	0	0	0	1	1
Research[a]	0	0	0	0	1	1
All 4-yr schools	**2**	**2**	**15**	**8**	**9**	**36**
2-yr public	0	1	6	5	2	14
2-yr private	0	0	1	0	0	1
All 2-yr schools	**0**	**1**	**7**	**5**	**2**	**15**
Column totals	2	3	22	13	11	51

[a] Participant did not identify institution as private or public

Use of REA

One item on the survey asked participants to report if they used or included REA in their work as one of five response choices. The researcher did not specify for participants what was meant by "use" of REA for participants beyond "include REA" in their work. The results, as set out in Table 6, showed 31 participants used/included REA in their work and 20 participants did not use/include REA in their work. The Mean for this item was 3.56, the Standard deviation 1.50, and the variance 2.25.

Table 6.

Frequency Distribution of Reported Use of REA

Reported Use of REA	Count	Percent
1. I do not include REA in my work because I do not know much about it. (nonadopters)	6	11.8
2. I know about REA, but do not include it much or at all in my work. (nonadopters)	11	21.6
3. I do not use REA in my work, but am actively seeking more information so I can use it. (nonadopters)	3	5.9
4. I have recently started including REA or some aspect of it in my work. (adopters)	10	19.6
5. I integrate REA or aspects of it throughout my work and have done so for many years. (adopters)	21	41.1
Column Totals	51	100%

Participants who reported they did not use or include REA were considered "nonadopters" and participants who reported they used/included REA in their work were considered "adopters" of REA. The data regarding demographic characteristics of adoption groups (adopters and nonadopters), as set out in Table 7, showed the majority of adopters and nonadopters were between 50-59 years of age. Most adopters had doctorates, were fulltime faculty, and made $80,001 or more a year; whereas most nonadopters had Master's degrees, were fulltime faculty, and made between $60,000-$80,000 a year.

Table 7.

Frequency Distribution of Demographic Variables by Adoption Groups

	Nonadopters		**Adopters**	
Demographic Variables	Count (n=20)	Percent (N=51)	Count (n=31)	Percent (N=51)
Sex				
Male	1	2.0	1	2.0
Female	19	37.2	30	58.8
Age				
30-39 yrs	4	7.8	5	9.8
40-49 yrs	6	11.8	3	5.9
50-59 yrs	7	13.7	17	33.3
60-70 yrs and older	3	5.9	6	11.8
Racial Identity				
African American	3	5.9	2	3.9
White	17	33.3	29	56.9
Highest Level Education				
Bachelor's	1	2.0	0	0
Master's	10	19.6	10	19.6
Ed. Specialist	0	0	1	2.0
Doctorate	9	17.6	19	37.3
Missing[a]	0	0	1	2.0
Teaching Position				
Fulltime	14	27.5	27	52.9
Parttime	6	11.8	2	3.9
Other	0	0	2	3.9
Title				
Adjunct/itinerant/lecturer	3	5.9	4	7.8
Clinical faculty	0	0	1	2.0
Assoc/Asst Professor	8	15.7	13	25.5
Professor	1	2.0	8	15.7
Missing[b]	4	7.8	1	0
Annual Income				
$40/k or less	1	2.0	1	2.0
$40,001/k-60/k	5	9.8	6	11.8
$60,001/k-80/k	7	13.7	7	13.7
$80,001/k-$100/k	2	3.9	5	9.8
$100,001/or more	3	5.9	10	19.6
Missing[d]	2	3.9	2	3.9

[a] One adopter did not respond to this time [b] Four nonadopters and one adopter did not respond to this item. [c] One nonadopter and one adopter did not respond to this item. [d] Two nonadopters and two adopters did not respond to this item

The researcher further investigated adoption groups by institution type (Table 8). The data showed of half of the participants teaching in 4-year private institutions, not faith-based, reported they used REA or some aspect of it in their work and half did not. The researcher further aggregated data by combining institution types and found that the majority of those participants teaching in 4-year combined institutions (public, private, HBCU, faith-based, and research) and the majority of those teaching in 2-year combined institutions (public and private), reported they use/included REA in their work. The groups were relatively proportional in use of REA, although about 8% more teachers in 2-year institutions reported using REA than teachers in 4-year institutions.

Table 8.

Adoption Groups by Institution Types

	Nonadopters			**Adopters**		
Institution Types	Count	Percent (n=20)	Percent (N=51)	Count	Percent (n=31)	Percent (N=51)
4-yr public	8	40%	15.7%	13	41.9%	25.5%
4-yr private	4	20%	7.8%	4	12.9%	7.8%
Faith-based	3	15%	5.9%	2	6.5%	3.9%
HBCU	0	0%	0%	1	3.2%	2.0%
Research*	0	0%	0%	1	3.2%	2.0%
All 4-yr	**15**	**75%**	**29.4%**	**21**	**67.7%**	**41.2%**
2-yr public	4	20%	7.8%	10	32.3%	19.6%
2-yr private	1	5%	2.0%	0	0%	0%
All 2-yr	**5**	**25%**	**9.8%**	**10**	**32.3%**	**19.6%**
Column Totals	20	100%	39.2%	31	100%	60.8%

Aggregated Knowledge by Adoption Groups

The researcher further compared knowledge by adoption groups to better describe differences between adopters and nonadopters. For ease of reporting, participants who stated they had "never heard of REA" and were "aware of REA but had little knowledge of it" were combined into one group knowledge group, "no/little knowledge of REA." As shown in Table 9, all participants with little or no knowledge of REA were nonadopters, and all participants with considerable knowledge of REA were adopters. There was a spread between adoption groups of participants with other levels of knowledge, but the data showed that the majority of participants in the second knowledge group, those with "knowledge of REA" (more than little or none) were nonadopters and that two participants who stated they were very familiar with REA were also nonadopters.

Table 9.

Reported Levels of Knowledge by Adoption Groups

	Nonadopters		**Adopters**		
Knowledge Levels	Count (n=20)	Percent (N=51)	Count (N=31)	Percent (N=51)	Row Totals
No/Little Knowledge of REA	5	9.8%	0	0	5
Knowledge of REA	13	25.5%	9	17.6%	12
Very Familiar with REA	2	3.9%	9	17.6%	11
Considerable Knowledge	0	0	13	25.5%	13
Column Totals	20	39.2%	31	60.8%	51

Years of Use by Adopters

One item in the survey instrument asked those participants who indicated they used REA in their work to report on the number of years REA was used. The data as set out in Table 10, showed three adopters used/included REA for less than one year, nine used/included REA in their work for about three years or less, seven said they used/included REA for about 4-6 years, five reported they used/included REA for about 7-9 years, and six said they have used/included REA for 10-13 years. Only one reported (s)he used/included REA for about 14-16 years.

Table 10.

Frequency Distribution Range of Years REA Used by Adopters

	Count	Percent
Years REA used in work		
Less than one	3	9.7%
1-3	9	29.0%
4-6	7	22.6%
7-9	5	16.1%
10-13	6	19.4%
14-16	1	3.2%
17 or more	0	0%
Column Total	31[a]	100.0

[a]Nonadopters did not respond to this item

Open-Response Data

One open-response item asked participants to describe or define REA based on their current knowledge of the approach. Data from the open-text responses were used to describe more fully participants' knowledge of REA and what South Carolina ECE teacher educators perceived to be most characteristic of the approach. Forty-three participants provided lengthy responses to this item and together wrote over 2,400 words. The researcher noted recurring words, phrases, concepts and themes used to describe features of REA found in the text and from these recurring words, phrases, concepts, and themes, seven categories and 13 subcategories were developed. These categories included: child-centered/emergent curriculum; project work; multiple representations of children's knowledge through art/multimedia (100 languages of children); teacher's roles/responsibilities; partnerships with parents & communities; the role of the environment; use of collaboration & interaction; documentation; specific thinking outcomes; and the rights/image of the child. The researcher also noted multiple references to specific learning theories and theorists, such as constructivism and Piaget and references to the geographic/historical contexts of REA, such as Northern Italy, post-WWII, and the book, *The Hundred Languages of Children.*

The researcher found participants most frequently described REA as a curriculum model or an approach to curriculum, and most participants included the phrase "child centered" or "child directed" curriculum to describe the approach. For instance, one participant wrote, "REA's child centered views of educating young children….Children are encouraged to explore their environment and essentially develop their own 'curriculum' based on their interests.'" Another wrote that REA was "a curriculum based

on the belief that each child knows what he needs. Children dictate their learning, but the whole community takes part in the teaching."

REA was also frequently associated with the Project Approach, project work, or discovery/inquiry learning, and was mentioned 28 times in the text. Often, child-centered or children's interests and project work were mentioned in close proximity in the text, such as: "[REA] is a child-centered, primarily project approach in which children learn through exploration and discovery," and "This approach is child-centered and a child's vision leads the curriculum of inquiry." Others described project work by comparing it to typical practices in American education. For instance, one participant stated, "Through this approach students are immersed in activities related to an interest. These activities incorporate all area of learning and may last week, months, or the entire school term—unlike the traditional thematic unit utilized in many places in US"; and another said, "Learning is not fragmented by imposed time restraints nor regulated by curriculum guides as young children seek to learn." And still another described project work as addressing standards:

> I would define the approach as project-based. The topic being studied in the early childhood classes are those chosen by the children. The instructor is able to weave in the standards or objects s/he needs, but the children determine what is to be studied based on their interests.

In contrast, one participant noted, "Emphasis is placed on social learning…and on students learning how to think, rather than on specific academic standards in a pre-set curriculum."

Project work was mentioned along with a wide variety of methods for learning, such as *hands-on, active,* and *discovery learning*. One participant wrote that REA was "a project approach, based on children's interest and children learn by 'doing.' " Another wrote, "RE is a project-based approach that encourages self-discovery in the learning environment with preschool children." Another participant wrote, "The Project Approach resembles this approach. I respect [sic] that learning is perceived to be exciting and fun and the environment inviting and warm."

The use of art, multimedia, multiple representations of knowledge, and 100 languages or forms of expression was mentioned 25 times. The word "art" appeared 17 times in the text, and REA was often described as an "art based" approach or that art was the "primary focus" of the approach. For example, one participant wrote "A child-centered approach which is art-based where children are free to explore with different materials and world [sic] at their own pace." Another wrote, "It is aesthetically appealing based on art as the primary medium for learning with an environment rich in materials." Other participants stated, "Children learn all disciplines through the arts"; "Art and creativity are the mainstays of the approach"; and "They utilize art and creative expression in significant ways in the classroom." Two participants specifically mentioned the "alteriesta," and others provided in-depth descriptions of REA's use of art or included it in a list of media or modes of expression used in REA. For instance, one wrote, "[C]hildren express their knowledge in a variety of ways, through art, music, language."" Other participants wrote, "A unique feature is that children are given the opportunity to re-visit their work over time - refining and reflecting new understandings in clay, paint, found objects, sculpture, drama, and through other media. They are guided

in their efforts to depict what they have learned through the arts-with the help of a trained artist"; and, "The Reggio Emilia approach also calls for multiple representations of knowledge; through print, art, construction, drama, and music. The importance of this is evidenced by the atelierista." One participant defined REA's focus on symbolic languages in terms of "skills" stating, "The child's curiosity guides the instruction, and teacher 'build' the project based on student response. Through multiple experiences that involve all the senses and a variety of skills—referred to as symbolic languages—the children learn."

Participants also used a variety of terms to describe the teacher's roles and responsibilities. The word "teacher" appeared 33 times in the text, and the role of the teacher was described as facilitator, guide, learner, researcher, observer, partner, co-constructor of knowledge, and collaborator. Among the activities of teachers described by participants, teachers were noted to observe children, document, team with parents, provoke and stimulate thinking, provide materials, and set up situations and activities. The work of teachers was often mentioned in conjunction with observation and documentation, such as,

> The teachers will use observation, documentation, and questioning that gives life to the curriculum. Teachers support students by giving them access to high quality materials and providing scaffolding as students explore their interests. Teachers (and others in the classroom) document students' learning by recording oral, written, and work samples. This documentation serves to help teachers

reflect and also to communicate to families about how students are learning.

Most participants described teachers as working collaboratively with children, parents, and other teachers. One participant wrote, "There is a high degree of teacher autonomy to design curriculum based on the interests and needs of the children."

Documentation was also mentioned along with multiple modes of expression or multimedia. For instance, one participant wrote, "Children document their learning in multiple ways; through pictures, drawings, work samples, displays, models, etc." Documentation was mentioned 12 times, sometimes as the work of teachers and sometimes as the work of children.

REA's emphasis on parent, family, and/or community involvement was mentioned 22 times in the text and often followed by terms of importance, such as "critical" "essential" and "vital." For instance, one participant wrote, "The involvement of families is critical in developing this learning community" and another stated, "The partnerships between parents and the school are by necessity very close ones - parents play a role developing curriculum and supporting its implementation." Most participants described parents as working in conjunction with teachers and children or with teachers and the community such as, "It is an approach in which the child, teacher, and parents work together to decide on learning goals" and "There is a strong relationship among families, teachers, and community."

There were nine instances in which participants defined REA in relation to its geographic or historical contexts, such as "Child Centered, Project Oriented using the many languages of children as espoused by the Reggio Community in Italy" and "A

community and arts-based approach to early childhood education growing out of post WWII needs to bring a community together around the education of their young children." One participant explained the historical context of REA, stating, "After WWII, this area of Italy was given, like all other areas of Italy funding for redevelopment; this area chose to use their resources to provide what is needed for young children, birth through age 5 or 6. This was the birth of Reggio Emilia."

There were also 20 references to specific learning theories, such as constructivism and multiple intelligences, and to particular theorists, such as Dewey, Piaget, Vygotsky, and Montessori. One participant stated, "Child centered; constructivist; kind of a cross between Montessori and Piaget with a good bit of Vygotsky thrown in." One defined the approach from Malaguzzi's perspective, stating, "Malaguzzi thought they were an ever evolving, child centered approach that depended on the collaboration of teachers, parents, community, and children to best follow the lead of the child or as Malaguzzi said to respect the child's rights." This participant went on to say, "Since his death I think the approach is becoming more canonized and has lost its dynamic nature to a certain degree. Once they started selling it, it has become commercialized and set in stone."

There were 15 references to the learning environment, and participants used the words: "beauty," "order," "supports learning," "homelike atmosphere," "inviting," "warm," "material-rich," "natural," and "lots of natural light" classrooms or the environment. Only one participant described the environment as a third teacher, stating, "Great attention is given to the environment (the 3rd teacher) for asthetics [sic], exploration, problem solving, small groups, use of various arts for expression and documentation of children's work." One wrote that in REA, "School is a place that values

beauty, culture, and differences." And another participant wrote, "The Reggio Emilia Approach is a curriculum through which the physical environment is highly important to the child's education. The child uses the environment to learn and express their learning through projects" and another stated, "Careful attention is payed [sic] to an environment that is aesthetically pleasing." Another thought of the environment in "zones" stating, "An environment rich with stimulating thoughtful activity zones where interaction is free flowing promotes cognition creative and language in children."

Several participants described thinking outcomes or processes related to REA. For instance, one stated, "The Reggio Emilia approach uses reflective thinking to determine best practices for the children in care." And another wrote about REA's "belief" about children as well as its emphasis on thinking, stating, "The Reggio approach believes that children are competent, capable learners who learn best through interactions with others which enables them to acquire skills of collaboration and critical thinking." There were nine references to REA's positive image of children, including descriptions of children as "worthy of beauty" or "worthy of respect" and "full of rights." Only four participants referred to REA in social action or political terms. One stated, "The Reggio Emilia approach is child centered focused on fostering democratic values through providing children the tools and autonomy to construct knowledge through active engagements (projects) …." And another wrote,

> It emphasizes relationships, creativity and social action. Specifically I would categorize it as a program that supports action through agency, both for individuals and the collective. Spaggiari stated, 'giving a voice to

childhood thus means recognizing children's right to be the primary authors of their lives.'

Interview Data

One criterion used in selecting interview participants was that participants needed to have some knowledge of the approach. It was believed that the data needed regarding participants who reported having no knowledge of REA would be acquired through the survey instrument alone and no additional information would be revealed through interviews. Therefore, all eight participants reported having at least some knowledge of the approach, although they self-reported different amounts or levels of knowledge.

The sample also reported different levels of use of REA. One participant reported she did not use REA at all in her work, and three stated they only mentioned it in passing or did not use it explicitly in their work. The other five all reported they implemented REA or some aspect of it and provided explicit instruction in their courses. In this study, participants were considered to be nonadopters if they reported having little knowledge of the approach, were still deciding on whether or not to use the approach, or had decided against including the approach in their work. It was found that one nonadopter had extensive knowledge of the approach, but formed an unfavorable attitude about it and did not use it explicitly in her work. The researcher analyzed the interview data after first sorting the sample into two groups: nonadopters and adopters, and reported findings for these two groups.

Two participants, Darla and Alison, stated they had little knowledge of the innovation and stated they did not implement REA in their work because they didn't have

enough knowledge to implement REA or enough time to learn more about REA so they could implement it. Darla, a teacher in a 2-year technical college, reported first learning about REA at a state conference and also reported visiting a local center that, at one time but no longer, implemented REA. She reported having knowledge, but stated she lacked the knowledge needed to do more than discuss REA with students. She described including REA in her work through lectures, describing REA as one of three different curricula models there were utilized in ECE. She stated she "saw Reggio" as "children drive the curriculum" and that she felt REA was an approach that "allows children to be children." She also stated she did not believe REA was something that was appropriate for her students, suggesting it was better for "higher levels" of education.

Alison, a teacher in 4-year, private, faith-based institution, also stated she had little knowledge of REA. She first learned of REA by reading about it in textbooks and, like Darla, had visited a local center using REA. She described being impressed by the design and beauty of the local center, and stated she perceived REA as an approach that was child-centered, open, focused on art and creativity. She also stated, "Reggio as far as I understand it is about child choice, but the teachers/parents do set up a framework for the children. It's not that the child can do anything they want, apparently." Alison was found to be in the persuasion stage in that she had formed a favorable attitude toward REA, often comparing REA practices she liked with her own practices when she taught 4K. She hypothesized how she might implement REA into her work, but stated she lacked the time in her courses to include REA.

Unlike the other two nonadopters, Barbara stated she had extensive knowledge of REA but did not explicitly implement REA in her coursework because she stated she felt

other approaches were more appropriate for her students. She stated she included some images or slides of REA, but felt she had "so much content and not too much time" to spend on REA. She also stated she had formed a nonfavorable attitude about REA as a result of a disappointing trip to the infant/toddler centers in Reggio Emilia, Italy. She felt there was a "mismatch" between what she expected to see and learn from her trip and the limited information provided her by those hosting the tour. It was unclear if her decision represented active rejection because, she explained, REA was part of her knowledge base and she included some examples and images from REA in her course, though she did not provide explicit instruction in the approach.

The other five interview participants all stated they used REA in their work in more ways than lecture or class discussions about REA as a curriculum model. Two participants, both teaching in public, four-year institutions in the Midlands reported knowing about REA and described the innovation in terms of teaching practices, focusing on procedural or how-to-knowledge. Both were found to be in the implementation stage. Mary said she included slides of REA in her courses and taught students about the uses of project work and documentation. Her described REA in terms of practices and noted teachers could use project work to meet state standards. Fran, who taught in an HBCU, stated she had an "adequate amount of knowledge" but did not feel she had "extensive knowledge." She, too, described REA in terms of project work, but specifically mentioned the Project Approach (Katz & Chard, 2000). She noted REA and the Project Approach, though not exactly the same, both modeled effective teaching practices that were supportive of the learning styles of African American children.

The remaining three interview participants reported having extensive knowledge of the approach, although all stated they were not "experts." Three had incorporated the innovation as a regular part of their ongoing work suggesting they had moved beyond the innovation-decision process. Rhonda, a teacher in 2-year technical college, stated she had extensive knowledge and spoke mainly about REA as a child-centered approach to curriculum. She included REA throughout her courses and stated teachers in her institution's on-site child development center used many REA practices, including project work and documentation. She explained her belief that REA was an approach that followed the interests of children, which she felt was "better" than the traditional thematic approach used in many early childhood programs.

Ben, a teacher in a 4-year public institution, described REA in relation to philosophies and attitudes underlying REA practices, such as having respect for the rights of children and learning to trust in young children's abilities. He integrated REA philosophies in his courses as well as included demonstrations of REA practices, such as slides of children's work and student activities focusing on light and shadows.

Judy, a teacher in a 4-year public institution, also stated she had extensive knowledge of the approach and had integrated it throughout her work for many years. She stated she had "done a lot of different things" related to REA in a variety of classes taught over the past ten years or so. She described her particular interest in the use of documentation as a type of "structured reflection" and described implementing REA in her institution's on-site child development center, where she was the director. She also had an upcoming trip to Italy planned to study schools using REA more directly.

Quantitative Survey Data

To address research subquestion1(b) regarding the communication channels used to diffuse REA in South Carolina, quantitative and qualitative data were collected and analyzed. Analysis of the one survey item regarding communication channels used to diffuse information about REA are set out in Table 11, and show that the majority of participants (N=51) reported they first learned about REA through two types of communication channels: mass media such as books, articles, or videos and through coursework including doctoral work.

Table 11.

Initial Communication Channels for Learning about REA (N=49)

Source of Initial Contact with REA	Frequency	Percent
Book, article, or video	15	30.6%
Conference in SC	1	2.0%
Conference outside of SC	5	10.2%
Colleague in SC	5	10.2%
100 Languages Exhibit	5	10.2%
Visited REA school	2	4.1%
Coursework	16	32.6%
Missing[a]	2	3.9%

[a] Two participants who never heard of REA did not respond to this item

Communication channels by adoption groups were also investigated, as set out in Table 12, and it was found that more adopters than nonadopters first learned about REA through conferences outside of South Carolina, visits to REA schools, and visits to the Hundred Languages Exhibit.

Table 12.

Initial Communication Channels by Adoption Groups

Q: "How did you first learn about REA?"		Non Adopters	Adopters	Row Total
Book, article, or video	Count	7	8	15
	% of Total	14.3%	16.3%	30.6%
Conference in SC	Count	1	0	1
	% of Total	2.0%	0%	2.0%
Conference outside of SC	Count	1	4	5
	% of Total	2.0%	8.2%	10.2%
Colleague in South Carolina	Count	2	3	5
	% of Total	4.1%	6.1%	10.2%
Hundred Languages Exhibit	Count	1	4	5
	% of Total	2.0%	8.2%	10.2%
Visited REA school	Count	0	2	2
	% of Total	0%	4.1%	4.1%
Coursework including "other" (doctoral work)	Count	6	10	15
	% of Total	12.2%	20.4%	32.6%
Total (N=49)[a]	Count	18	31	49
	% of Total	36.7%	63.3%	100.0%

[a] Two participants who said they never heard of REA did not respond to this item.

The researcher also analyzed data related to initial communication channels and participants' employing institutions. It was found that the majority of participants in both 4-year and 2-year combined institutions first learned about REA through books/articles/video and coursework. In addition, those demographic characteristics that diffusion theory (Rogers, 2003) suggested were related to communication channels, including socioeconomic status, the number of professional organizations, and participants' attendance at state, national, and international conferences, were investigated. Chi-square tests of independence showed no differences among initial communication channels and participants' annual incomes or the other variables and few differences in initial communication channels and adoption groups

Interview Data

Initial Communication Channels

Nonadopters were asked how they first came to learn about REA. Alison reported first learning of REA as a result of reading about it in a textbook, Darla learned about it through a state conference, and Barbara first learned about REA through colleagues in the state. Adopters also reported how they first came to learn about REA. Fran and Ben stated they first learned of the approach from colleagues in the state, Judy and Rhonda first read about it, and Mary first learned about REA from a state conference. Rhonda and Judy, the two adopters who most thoroughly implemented REA in their work, first read about the approach. Judy read about REA while in graduate school in another state. Interview participants' initial contact and impressions of REA are reported in more detail under subquestion 2(a).

Quantitative Survey Data

To address research subquestion 1(c), "What REA professional development activities have ECE teacher educators in SC participated in?" the researcher collected data about the professional activities of participants related to REA in order to better explore and describe the communication channels and professional networks among participants used to diffuse REA. Data was collected with fixed-choice survey questions as well as through interviews. No open-text items collected data to address this research question.

Professional Development Activities

Six items on the survey asked participants to identify the type and number of professional development activities they participated in that were specifically about REA. The data, set out in Table 13, showed about two-thirds of participants reported attending one or more conferences about REA and about one-third reported they had never attended a conference about REA. Further a majority of participants reported had never taken a course about REA nor taken a study tour/visited an REA school. Only four participants reported making a professional presentation about REA at a conference and only one participant reported authoring a publication about REA. However, about one-third reported teaching at least one course about REA, although it is uncertain if participants were reporting on courses that were specifically about REA or if these were courses that simply included information about REA.

Table 13.

Participants' Professional Development Activities about REA (N=51)

	Frequency	Percent
Professional Development Activities about REA		
REA Conferences Attended		
None	16	32.7%
1-3	26	53.1%
4-6	6	12.2%
7-9	1	2.0%
Missing	2	3.9%
Professional Development Activities about REA		
Courses about REA Taken		
None	36	70.6%
1-3	8	15.7%
Missing	7	13.7%
Study Tours/Visits to REA Programs		
None	31	60.8%
1-3	8	15.7%
Missing	5	3.9%
REA Presentations Made		
None	40	78.4%
1-3	2	3.9%
4-6	1	2.0%
7-9	1	2.0%
Missing	7	13.7%
Courses about REA Taught		
None	31	60.8%
1-3	12	23.5%
4-6	1	2.0%
7 or more	2	3.9%
Missing	5	9.8%
Publications about REA Authored		
None	43	84.3%
1-3	1	2.0%
Missing	7	13.74%

The researcher also compared professional activities by adoption groups, as shown in Table 14. Nonadopters as well as adopters attended conferences about REA, completed courses about REA, and participated in study tours or visited REA schools. Only adopters, however, reported they taught courses about REA, made presentations at conferences about REA, and authored a publication about REA.

Table 14.

Adoption Groups' Professional Development Activities about REA

	Adoption Groups		
	Nonadopters	Adopters	Total
Professional Activities about REA			
REA Conferences Attended (n=49)			
None	10	6	16
1-3	8	18	26
4 or more	0	7	7
Total	18	31	49
	36.7%	63.3%	100.0%
REA Courses Completed (n=44)			
None	15	21	36
1-3	2	6	8
Total	17	27	44
	38.6%	61.4%	100%
REA Study Tours/visits (n=46)			
None	15	16	31
1-3	2	13	15
Total	17	29	46
	37.0%	63.0%	100%
Presentations about REA (n=44)			
None	17	23	40
1 or more	0	4	4
Total	17	27	44
	38.6%	61.4%	100%

Table 14 (Continued).

Adoption Groups' Professional Development Activities about REA

	Adoption Groups		
Professional Activities about REA	Nonadopters	Adopters	**Total**
REA Courses Taught (n=49)			
None	17	26	43
1-3	0	1	1
4 or more	0	7	7
Total	18	31	49
	36.7%	63.3%	100.0%
Authored Publications about REA (n=44)			
None	17	26	43
1-3	0	1	1
Total	17	27	44
	38.6%	61.4%	100.0%

Communication Networks and Professional Development Activities

One item on the survey asked participants to identify the number of professional organizations they belonged to. As suggested by Rogers (2003), the researcher assumed participants' professional activities represented opportunities for exchanging ideas and exposure to innovations. In addition, the vicinity of professional conferences, such as national or international conferences, also reflected participants' opportunities to be exposed to new ideas. Three items on the survey instrument asked participants to identify the number of state, national, and international conferences they attended on a yearly basis. As shown in Table 15, the majority of participants (n=48) reported they belonged to between 1-5 professional organizations and almost all participants reported they attended between 1-2 state conferences annually, whereas few reported they

attended no state conferences. Further, about three-fourths of the participants reported they attended one or more national conferences annually and about one-fourth reported they attended between 1-2 international conferences.

Table 15.

Frequency Distribution of Professional Development Activities

Number of Professional Organizations & Annual Conferences Attended	Frequency	Percent
Professional Organizations joined (n=48)		
None	1	2.0%
1-2	19	37.3%
3-5	26	51.0%
6 or more	4	7.8%
Missing	1	2.0%
State conferences (n=48)		
None	5	9.8%
1-2	37	72.5%
3-4	8	15.7%
Missing	1	2.0%
National conferences (n=44)		
None	6	11.8%
1-2	31	60.8%
3-4	9	17.6%
Missing	5	9.8%
International conferences (n=38)		
None	28	54.8%
1	11	21.6%
2 or more	1	2.0%
Missing	11	21.6%

Professional activities by adoption groups were also reported and set out in Table 16. The data showed that proportionally there were few differences between and within nonadopter and adopter groups. When the professional activities within groups was considered (n=20 for nonadopters and n=31 for adopters), it was found that a higher percentage of nonadopters than adopters belonged to 1-2 professional organizations, whereas a higher percentage of adopters than nonadopters belonged to 3-4 professional organizations. Further, a higher percentage of nonadopters reported going to no state conferences compared to the percentage of adopters attending no state conferences, and a higher percentage of nonadopters reported going to no international conferences compared to the percentage of adopters who attended no international conferences. And, likewise, a higher percentage of adopters attended one or more international conferences compared to the percentage of nonadopters who attended one or more international conferences.

Table 16.

Professional Activities by Adoption Groups

	Nonadopters			**Adopters**		
	Count	% (n=20)	% (N=51)	Count	% (n=31)	% (N=51)
Professional Activities						
No. of Prof. Organizations						
None	0	0%	0%	1	3.2%	2.0%
1-2	10	50.0%	19.6%	9	29.0%	17.6%
3-5	8	40.0%	15.6%	18	58.1%	35.3%
6 or more	1	5.0%	2.0%	3	9.7%	5.9%
Missing	1	5.0%	2.0%	0	0%	0%
Column Totals	20	100%	39.2%	31	100%	60.8%

Table 16 (Continued).

Professional Activities by Adoption Groups

	Nonadopters			Adopters		
	Count	% (n=20)	% (N=51)	Count	% (n=31)	% (N=51)
No. State Conferences/Yr						
None	3	15.0%	5.9%	2	6.5%	3.9%
1	7	35.0%	13.7%	15	48.4%	29.4%
2	6	30.0%	11.8%	9	29.0%	17.6%
3	4	20.0%	7.8%	3	9.7%	5.9%
4 or more	0	0%	0%	1	3.2%	2.0%
Missing	0	0%	0%	1	3.2%	2.0%
Column Totals	20	100%	39.2%	31	100%	60.8%
No. National Conferences/Yr						
None	2	10.0%	3.9%	4	12.8%	7.8%
1	8	40.0%	15.7%	11	35.5%	21.6%
2	5	25.0%	9.8%	7	22.6%	13.7%
3	2	10.0%	3.9%	6	19.4%	11.8%
4 or more	1	5.0%	2.0%	0	0%	0%
Missing	2	10.0%	3.9%	3	9.7%	5.9%
Column Totals	20	100%	39.2%	31	100%	60.8%
No. International Conferences/Yr						
None	13	65.0%	25.5%	15	48.4%	29.4%
1	3	15.0%	5.9%	8	25.8%	15.7%
2 or more	0	0%	0%	1	3.2%	2.0%
Missing	4	20.0%	7.8%	7	22.6%	13.7%
Column Totals	20	100%	39.2%	31	100%	60.8%

Open-Response Data

One open item on the survey asked participants to describe professional development activities they felt were needed to help them better understand or use REA in their work, and 39 participants responded to this item. The researcher first sorted and categorized the data by types of professional development activities mentioned by participants. After reading and organizing the text, seven types or categories of professional development activities emerged, namely:

(1) conferences, workshops, training seminars, courses, and general information, (2) mass/multimedia (books, Internet, DVDs, videos, (3) observation/visits to local schools that utilize REA, (4) study tours/visits to REA schools in Italy, (5) dialogue and direct experiences with REA schools, teachers, or other experts in REA or ECE, (6) time, and (7) "other," which included two broad responses that did not fit into any of the other categories. These two "other" responses included the need for "professional development" and "more connection to literacy content." In addition, four participants stated there was "nothing" further needed to help them better understand/utilize REA.

The one professional development activity that was mentioned most often by participants was the opportunity to visit/observe in local REA schools, which was mentioned 13 times in the text. Six participants did not specify the location of the REA schools they wished to visit, such as local or Italian; they simply described wanting to visit a model REA. For instance, as one participant wrote, "model classrooms to observe" and another wrote, "I need to visit an REA school." It is assumed that unless the writer specified REA in Italy they meant a local or state school. Other participants were very specific in the location of the REA school. For example, one participant wrote, "There are no programs in this area that effectively use REA. It would be helpful to have a model program in which students could observe and learn REA in action"; and another wrote, "More day cares or schools in our area to observe and learn from." And another wrote, "It would be great if there were first-3rd grade field sites where teachers were using this model for my students to visit."

Nine participants specifically stated the desire to visit REA schools in Italy, and two mentioned wishing to take additional study tours in Reggio Emilia, such as one who

wrote, “I would really like to spend additional time in Reggio and visit the schools again.” Another stated, “I would love to have another visit to Reggio becasue [sic] you have to see it to understand. I would like to take all of our students to visit.”

Eleven participants listed the need for more conferences, workshops, training seminars, or general information. One stated the need for “more concentration on the approach in state and national conferences” and another wrote, “I would love to attend a workshop on this topic.” Three participants mentioned the need for time for professional development. For instance, one wrote, “I would love to attend a conference session regarding REA. Unfortunately I do not have time for something such as week-long workshop.” Two other participants mentioned the need for “more time…to evaluate schools that say they use REA” and “more time observing and participating in a Reggio school.” Another participant mentioned the lack of time to add more information about REA into her courses. (S)he wrote, “I think I have enough knowledge for how I am presently including REA in my courses. There are so many required topics that I must cover, that there is little time to add anything else.”

Four participants mentioned a desire to “dialogue” or participate in more direct activities such as “opportunities to interview persons more familiar with the work than I am” and “time to evaluate programs that ‘say’ they are using the approach.” One described the need to talk with other early childhood educators, explaining, “I’d like to see more dialogue between all early childhood educators who advocate for chld [sic] centered curricula.” And another participant wrote that (s)he would like “actual experiences—talking with teachers, observing students and teachers in REA programs, participating in the curriculum.” Similarly, one participant wrote, “I would love to work

in a REA classroom in the summer just to see it work with children and to experience it for myself."

Only two participants mentioned the need for additional mass media resources, such as videos and DVDs. One participant wrote about the need for "updated" information and for "information regarding REA in the textbooks and DVDs so that we may receive more objective information." And another wrote, "To compensate for not visiting or to supplement visits, I'd like to see more videos available that could provide students a feel for the essence of a Reggio program." Three participants also mentioned some other type of professional development activity that did not fit into the above categories. For example, one wrote about the need for "professional development" and another wrote about the need for "more connections to literacy content."

The researcher also found 13 participants wanted a specific kind of information, such as general information (awareness information) or procedural (how-to) information. For instance, three participants stated they needed "information," "more instruction/information on the topic," and "more updated information." Five participants mentioned the need to understand REA by seeing it themselves or to see "Reggio in action."

One expressed the need "to evaluate programs that *say* they are using the approach" and two asked for specific procedural (how to) information, such as more information on REA's "connections to literacy content" and information on how to incorporate REA and writing. One wrote, "If I attended a conference about it, I think I would be able to get ideas about how to incorporate it."

Interview Data

REA Professional Development Experiences

All three nonadopters had visited REA schools. Darla and Alison had visited schools in their local area and Barbara had traveled to Reggio Emilia, Italy. Darla recalled she first learned of the approach as a result of attending a state conference and from visiting a local preschool program in her area that, at one time but no longer, utilized REA. Alison stated she first read about REA in a textbook and attended one local workshop at a child development center in her area that utilized REA. Further, Alison stated she had limited opportunities or resources for attending professional conferences and, therefore, attended only local professional conferences and workshops. She also noted that she lacked time and administrative support for any professional conferences outside her local area. Barbara stated she traveled to Reggio Emilia, Italy several years ago to see REA model schools first-hand; however, she reported the experience did not provide her with the information she was looking for and she was "disappointed" by it because she perceived the experience as a "mismatch" between the openness she expected to see in REA schools and what she was allowed to see during her study tour. She also felt the Italian hosts did not dialogue openly with other early childhood experts that were on the tour with Barbara. She summed up the trip by stating, "It really occurred to me that this was like the Emperor's clothes—that they were taking about something but not really letting us see it. We toured centers, but we weren't able to tour any centers with children."

All adopters reported reading about REA in books, textbooks, or journal articles. Ben, Judy, and Rhonda mentioned specific books they had read, including: *The Hundred*

*Languages of Children: The Reggio Emilia Approach to Early Childhood Education (*Edwards, Gandini, & Foreman, 1993), *Bringing Reggio Emilia Home* (Cadwell, 1998), and *The Young Investigators: The Project Approach in the Early Years* by (Helms & Katz, 2001).

Fran reported being heavily involved in a variety of professional activities and organizations. She also stated she had attended several conference sessions and read numerous articles about REA, had visited the *Hundred Languages of Children* exhibit, and that she knew several "experts in REA" whom she often invited to speak to her students. Mary reported she had knowledge of REA and utilized it in her work. She stated she had visited several model REA schools in the state and first learned about the approach from attending a state conference. She also had toured the *Hundred Language of Children* exhibit. The remaining adopters reported implementing REA and having extensive knowledge of the approach.

Ben reported being involved with numerous professional activities in the state, mainly through another infant-toddler approach. He traveled to Reggio Emilia, Italy, to study REA more directly. Two other participants, Judy and Rhonda stated they had extensively implemented REA in their work, but neither had traveled to Italy to visit REA schools themselves. Judy stated she had researched and implemented REA in her work for a number of years and had also visited model schools outside South Carolina while working at a university in another state. She was planning an upcoming trip that summer. Rhonda reported working closely with a Reggio-inspired school in her area, as well as working with the previous director of her school's on-site child development center who had implemented REA practices at the center prior to Rhonda coming to that

school. Rhonda reported she extensively read about and researched REA on her own and traveled to REA model schools in St. Louis, Missouri.

Additional Professional Development Needs

Interview participants were also asked to describe what, if anything, they felt was needed to help them better understand or utilize REA in their work. The researcher wanted to collect data regarding the most helpful types of professional development activities described by participants.

Nonadopters Darla and Alison both expressed the need for more time to study REA for themselves. Darla described devoting much time and attention to the NCAEYC accreditation process, stating it would be difficult to "keep up" with escalating demands. Alison also stated the need for time to study REA for herself, but she said she had limited support from her institution with regard to allowing her time away from teaching and providing financial resources for professional development. She stated she attended only local professional development activities. She also stated her desire to study REA at length and in a direct way: "I would love to have an opportunity… where I could, for a whole month, work in a classroom with children a master teacher in Reggio. I would love to experience it for myself and learn that way." There was a well-established REA preschool program in her area, and Alison felt it would be important to bring her students on a tour of the school, but did not know how she could make time for REA in her already full courses: "I don't know how I could possibly put it in with what I'm teaching now. I can barely cover everything I need to." Barbara also noted she did not have the time to include REA in her courses. Additionally, she did not think any thing more was needed.

Adopters were also asked what, if anything, they needed to help better understand/use REA in their work. Fran stated, "I certainly appreciate the Reggio curriculum. I certainly have no problem giving my students more and more information about it. I just have not had the time to immerse myself in it….Right now, they're just getting the basics." Mary stated the need for students to see REA in a "real classroom" Judy and Rhonda, both of whom had been implementing REA for a number of years, stated their desire to travel to Italy to see REA schools for themselves. Judy was scheduled to take a study tour in the summer. Judy also described the need for early childhood teacher educators to better understand REA, and felt it was important for REA teacher educators like her to share their work through writing, explaining:

> Early childhood teacher educators are pretty challenged in their institutions because there are not that many of us and we wear many hats and it can be difficult to be really prolific and productive in writing. But that is one of the things that I think is really important that we have a responsibility to share what we are doing.

Ben suggested a "systematic" effort to "get people trained and educated" might be helpful in diffusing REA and suggested the need for a training and support network for REA, similar to the network of people in South Carolina studying the WestEd Program for Infant and Toddler caregiving. He suggested the need for a "sponsor who would be willing to build a network and support people in getting additional training and evaluation of their own work," noting, "So, how do we expect to keep alive and current

and enthusiastic if we don't keep them up or give them some way to keep connected to the content?"

Quantitative Survey Data

To address research subquestion 1(d), "How do ECE teacher educators' perceive attributes of REA in light of diffusion of innovations theory?" the survey included 12 scale items to describe participants' perceptions of the five key traits of REA: relative advantages, compatibility, complexity, observability, and trialability. Participants who stated they never heard of REA did not respond to these items as a result of embedded skip patterns in the survey instrument. The researcher analyzed survey data by aggregating all agree and disagree responses and reporting findings by adoption groups (adopters and nonadopters) in tables following brief discussions of each trait.

Relative Advantages

The two items on the survey measured relative advantage in terms of rationality advantages only, and findings for adoption groups are set out in Table 17. About one-half of the participants, the majority of them adopters, agreed with the statement, "REA improves the quality of my work" and over one-half of the participants, mostly adopters, also agreed with the statement, "Using REA enhances the effectiveness of my work." The majority of nonadopters neither agreed nor disagreed with the statements. Frequency distributions and descriptive statistics for all responses for this item are shown in Tables 28 and 29 (Appendix J).

Table 17.

Adoption Groups' Perceptions of REA's Relative Advantages

Survey Items about Relative Advantages [a]	Non Adopters	Adopters	Total	Percent
"REA improves the quality of my work"				
Disagree	3	1	4	8.2%
Agree	3	24	27	55.1%
Neither Agree/Disagree	12	5	17	34.7%
Missing[b]	[a]	1	1	2%
Total (N=48)	18	31	49	100%
"Using REA enhances the effectiveness of my work "[a]				
Disagree	5	1	6	12.2%
Agree	3	28	31	63.3%
Neither Agree/Disagree	10	2	12	24.5%
Missing	[a]	--		--
Total (N=49)	18	31	49	100%

[a] Two nonadopters who never heard of REA did not respond to these items.
[b] One adopter did not respond to this item

Compatibility

Four items on the survey asked participants about their perceptions of REA's compatibility in relation to: (1) their personal goals for early childhood education, (2) their personal views about early childhood education, (3) their institution's goals for early childhood teacher education, and (4) SC's goals for early childhood teacher education. As shown in Table 18, over three-fourths of the participants agreed that REA fit with their personal goals for ECE and with their personal views about ECE. A majority of nonadopters also agreed that REA fit with their personal goals and views. Further, a majority of participants perceived REA fit well with their institutions' goals for early childhood teacher education, and a smaller majority agreed that REA fit well with South

Carolina's goals for early childhood teacher education. The frequency distribution and descriptive statistics for these items are shown in Tables 30 and 31 (Appendix J).

Table 18.

Adoption Groups' Perceptions of REA's Compatibility

Survey Items Addressing Compatibility:	Non Adopters	Adopters	Total	Percent
"REA fits well with my personal goals for ECE"				
Disagree	2	0	2	4.1%
Agree	10	31	41	83.7%
Neither Agree/Disagree	6	0	6	12.2%
Missing	[a]	--	--	--
Total	18	31	49	100%
"REA fits well with my personal views for ECE"				
Disagree	2	0	2	4.1%
Agree	12	31	43	87.7%
Neither Agree/Disagree	4	0	4	8.2%
Missing[b]	[a]	--	--	--
Total	18	31	49	100%
"REA fits well w/institution's goals EC teacher ed"				
Disagree	3	6	9	18.4%
Agree	10	24	34	69.4%
Neither Agree/Disagree	5	1	6	12.2%
Missing	[a]	--	--	--
Total	18	31	49	100%

Table 18, (Continued).

Adoption Groups' Perceptions of REA's Compatibility

	Non Adopters	Adopters	Total	Percent
"REA fits well with SC goals for EC teacher ed"				
Disagree	4	10	14	28.6%
Agree	8	20	28	57.2%
Neither Agree/Disagree	6	0	6	12.2%
Missing[b]	[a]	1	1	2.0%
Total	18	31	49	100%

[a] Two nonadopters who never heard of REA did not respond to these items.
[b] One adopter did not respond to this item

Complexity

Two items were included on the survey instrument relating to complexity and participants were split in their responses. As shown in Table 19, about one-half disagreed with the statement, "REA is easy to understand," and about one-fourth agreed with it, whereas the other fourth neither agreed nor disagreed with the statement. The majority of participants, predominantly adopters of REA (n=25), agreed with the statement, "Learning to use REA in my work was difficult for me," and very few (3) disagreed with the statement; whereas about one-third neither agreed nor disagreed, most of these respondents being nonadopters. Frequency distribution and descriptive statistics for complexity scale items are set out in Tables 32 and 33 (Appendix J).

Table 19.

Adoption Groups Perceptions of REA's Complexity

Survey Items Addressing Complexity:	**Non Adopters**	**Adopters**	Total	Percent
"REA is easy to understand"				
Disagree	5	20	26	53.1%
Agree	4	10	14	28.6%
Neither Agree/Disagree	8	1	9	18.4%
Missing	[a]	--	--	--
Total	18	31	49[a]	100%
"Learning to use REA in my work was difficult for me"				
Disagree	0	3	30	6.1%
Agree	5	25	30	61.2%
Neither Agree/Disagree	13	3	16	32.7%
Missing	[a]	--	--	--
Total	18	31	49[a]	100%

[a] Two nonadopters who never heard of REA did not respond to these items

Trialability

Two items on the survey asked participants to respond to statements regarding REA's trialability. As shown in Table 20, participants were split in their responses to these two items. Whereas over half the participants agreed with the first statement, "I feel I can modify REA to fit my needs," and very few disagreed. Only a little more than one-third agreed with the second statement, "Before deciding to use REA in my work I had adequate time to experiment with it." Frequency distribution and descriptive statistics for trialability scaled items are set out in Tables 34 and 35 (Appendix J).

Table 20.

Adoption Groups' Perceptions of REA's Trialability

Survey Items Addressing Trialability	Non Adopters	Adopters	Total	Percent
"I feel I can modify REA to fit my needs"				
Disagree	1	2	3	6.1%
Agree	8	26	34	69.4%
Neither Agree/Disagree	9	3	12	24.5%
Missing	[a]	--	--	--
Total	18	31	49[a]	100%
"Before deciding to use REA in my work I had adequate opportunities to experiment with it"				
Disagree	8	12	20	40.8%
Agree	1	14	15	30.6%
Neither Agree/Disagree	9	5	14	28.6%
Missing	[a]	--	--	--
Total	18	31	49[a]	100%

[a]Two nonadopters who never heard of REA did not respond to these items

Observability

The survey instrument included two items reflecting the construct of observability and results demonstrability and the results are reported in Table 21. Response to the first statement, "Colleagues I know use REA in their work," showed a majority (34) of participants, both adopters and nonadopters, agreed with the statement. In response to the second statement, "It is difficult for me to see REA being utilized," a little over half disagreed with the statement and about one-third agreed and one-third (mostly nonadopters) neither agreed nor disagreed with the statement. Frequency distribution and descriptive statistics for observability scaled items are set out in Tables 36 and 37 (Appendix J).

Table 21.

Adoption Groups' Perceptions of REA's Observability

Survey Items Addressing Observability:	Non Adopters	Adopters	Total	Percent
"Colleagues I know use REA in their work"				
Disagree	3	6	9	18.4%
Agree	13	21	34	69.4%
Neither Agree/Disagree	2	3	5	10.2%
Missing[b]	[a]	1	1	2.0%
Total	18	31	49 [a]	100%
"It is difficult to see REA being utilized"				
Disagree	6	20	26	53.0%
Agree	4	10	14	28.6%
Neither Agree/Disagree	8	1	9	18.4%
Missing	[a]	--	--	--
Total	18	31	49 [a]	100%

[a] Two nonadopters who never heard of REA did not respond to these items
[b] One adopter did not respond to this item.

Open-Response Data

Two open-text items included in the survey asked participants to describe elements of REA they perceived as relevant and irrelevant to their work, which the researcher analyzed to further describe survey participants' perceptions of REA's traits of relative advantage and compatibility. Data from these items were also used to address the second research question.

Relative Advantages

Participants described philosophical and practical elements of REA as offering children a variety of benefits, all of which fell under the category of rationality advantages, or advantages for meeting specific goals. In this study, the specific goals

associated with REA had to do with teaching and learning goals in ECE. The rationality advantages described most often included: children's enthusiasm for learning by following their own interests, learning by doing, and learning how to think, critically, creatively, and reflectively. Participants also perceived high costs associated with REA in terms of time, effort, and money. Three participants cited time and money as barriers to implementing REA in their own work and in educational settings in South Carolina, and one stated South Carolina did not have the public will to invest in teachers or effectively implement REA in South Carolina.

Compatibility

Twenty-six participants described elements of REA they believed were more relevant to their work than other elements. These elements were sorted into three general categories or ways innovations are considered compatible suggested by diffusion of innovation's theory. Rogers (2003) explained that individuals perceive an innovation as compatible in terms of its matching (1) felt needs for an innovation, (2) cultural values/beliefs, and (3) previous ideas or familiar practices that are used as "a standard against which an innovation can be interpreted" (p. 243).

Only seven participants responded to the item asking them to list specific elements of REA perceived as irrelevant to their work, which the researcher analyzed as perceptions of incompatibility. Several participants included irrelevant elements of REA along with relevant elements in the previous item. The data showed that participants most often described REA as incompatible with the sociocultural values and current policies/practices in American education. More particularly, participants mentioned REA was culturally incompatible, was not used in either public or Christian schools, and

incompatible with the public will of South Carolinians. Only one participant described REA as incompatible based on ideas about familiar practices, stating REA was "very free" "not very much if any teacher directed activities" and "children are never made to do things unless it is an interest to the[m]." This statement could reflect incompatibility with participant's personal/professional values/beliefs or with existing ideas. Two participants stated there were no irrelevant elements.

Interview Data

Interview data was collected to further probe participants' perceptions about the specific traits of REA that may influence its diffusion among ECE teacher educators in South Carolina. The researcher divided the interview sample into two groups, nonadopters and adopters, believing there were wide differences between those who have not implemented or adopted REA and those who had, and that both groups would have different perspectives based on experiences implementing REA in their work. Following the discussion of common patterns found among both groups of participants, a summary paragraphs describing similarities and patterns found among all participants follows.

Nonadopters, Alison and Darla, both described potential advantages of REA. Darla stated she discussed REA in her courses because she felt her students needed to know about all ECE curriculum models for academic purposes. She supposed REA would be an effective approach because "children are allowed ask questions." Likewise, Alison believed REA offered some rational advantages in teaching children how to think for themselves and problem solve. She stated, "If you want to have people who can think for themselves, then you have to have problem-solving-type curriculum, very open-ended. I like the project idea. I like starting with the problem and finding the answers and

coming up with a product or whatever at the end. I just think all that is wonderful." Recalling her visit to a local REA school, Alison described what she liked about the school and why. She said she thought REA's emphasis on creativity and open-endedness made the approach superior to other approaches, stating:

> "I liked all the creative things—the children's sculptures, the children's art work, the children's writing….It was just very exciting to me because I think those things are so neglected in most curriculum. And, even the little bits I know about High/Scope and some of these other approaches are so structured. I just don't like that. I don't think it's good for the children. I don't think it teaches children to think. It teaches children to memorize, but not to really process and problem solve."

However, both nonadopters perceived there would high costs in terms of time and money involved in implementing REA in their work. Alison perceived REA was costly for early childhood programs desiring to implement REA. She stated programs would need "big money and big facilities" and a clientele with "a lot of money to spend on education" in order to implement REA. In addition, she felt only parents with "high-paying" professional jobs could afford to be as involved with their children's schools as suggested in articles she read about REA. She felt working families would be too busy to be actively involved with their children's schools:

> You might find interest in Reggio in big denominational schools, like Baptist schools, that have big money and big

> facilities….Even the clientele are different. In small Christian schools you don't have a lot of people who are professionals and have a lot of money to spend on education. Whereas many of the people going to [Local REA school church] are professionals and they have the money to pay higher tuition for their children.

Darla and Alison stated what they needed most to implement REA was time to learn about REA. Alison stated it would be difficult to fit REA into her already packed courses, stating, "I don't know how I could possibly put [REA] in with what I'm teaching now. I can barely cover everything I need to."

Both nonadopters discussed how compatible REA was to their own personal views and beliefs about best practices for teaching and learning in the early childhood years. Darla felt documentation was compatible with what she was teaching in her courses, and stated documentation was one element of REA that was already integrated into her institution's early childhood program. Alison perceived REA as highly compatible with her own personal views and goals for early childhood education and described in extensive detail various elements of REA that fit with her ideas about effective and appropriate practices with young children:

> And I love the openness of Reggio. I am very comfortable with open-endedness. Some people are not. Some people are threatened by it, but I really am a very creative person, and I appreciate anything that encourages creativity and thinking for little children. I don't like rote learning. It's

> boring. Learning ought to be fun and it ought to engage children. It just shouldn't be me telling a child or drilling a child or flash-carding a child or work booking a child to death. That, to me, is not learning. I just don't like that. I never have. And I didn't do a lot of that when I was teaching K4. I used learning centers which encouraged child-choice of centers to work in and then choice of activity once the child got to the center. The children moved at will from center to center working independently or with other children. I still had scheduled large group times. What I did was more structured than what I saw in Reggio.

Despite perceiving REA as highly compatible with their personal views and beliefs, both nonadopters described REA as incompatible with area ECE contexts as well as the current educational goals and policies guiding South Carolina. Darla described REA as an approach that "allows children to be children" rather than "driving them" in a "real academic type of way" but felt REA was different from much of the "South Carolina educational system" that likes to "dictate what children learn rather than to let them learn from their curiosity." She felt REA would be difficult to implement in South Carolina at the current time, stating,

> …[Y]ou've got to remember that this state is coming out of a huge economic deficit, almost, in people's lives, And, so, there is a different way of being reared in poverty and there

> is a different focus on education and there is a different focus on what's good for children and there's a different focus on how children should learn….So, therefore, I think it's going to take a couple more generations before we are really ready to understand that children need to learn from their own interests. And, of course, we have the standards in South Carolina for everything. And people who are not real knowledgeable in using those standard have to just teach to the standard rather than teaching appropriately for children and using those standards as a measure. I think that we could [implement REA], but we probably could not do it tomorrow, but I think we can in the future."

Alison perceived REA was incompatible with the Christian school setting, where many of her students were preparing to teach, stating:

> Christian schools aren't going to use it because Reggio depends on the professionalism and knowledge of the teacher rather than on a purchased curriculum. I think most Christian schools are afraid to give freedom to the teacher. They want everything the same in every K4 classroom—they are tied to the purchased curriculum….I think Christian schools wouldn't at all be interested in Reggio. They want a curriculum that is structured, highly predictable, and that feeds their and the parents' ignorance

> about how young children learn. They tend to believe that if a child doesn't have a pencil in his hand and a worksheet in front of him, he's not learning anything. Publishers nurture these ideas because workbooks are marketable."

Alison also felt REA was incompatible with the current practices found in the public school ECE settings in her area in that public schools were currently focused on standards, No Child Left Behind requirements, teaching to the test, and had a "cookie-cutter mentality," which she felt were contradictory to REA principles and practices.

Barbara perceived REA's primary advantage was that it served as an exemplary model of embedding children's families, communities, and cultures into caregiving practices. She described another approach to infant/toddler caregiving that she perceived offered the same philosophical advantages as REA but offered more practical applications for her students. Barbara also reported that she perceived time as a difficult, stating, "There are some wonderful images that help tell the story, but…in trying to really teach undergraduates growth and development, I think there is so much content that I don't have too much time for this piece of curriculum."

Nonadopters were also asked if they perceived REA as difficult or easy to understand or use. All nonadopters described REA as complex. Darla stated REA was more appropriate for students in "higher levels" of education than for her students, noting students in her program "benefit more from instruction on how to do a curriculum than they would with inquiry and those kinds of things." Barbara said she thought REA was compatible with South Carolina's goals for educating young children, but that she also believed her students might describe the approach as "unattainable" and "unrealistic" if

they tried to implement it in their work in South Carolina public schools because they would receive so little support from their school administrators. Barbara described REA as being incompatible with the typical vision of early childhood education held by school administrators in South Carolina and the general public, noting:

> "We need and don't have administrators who understand early childhood for the most part…I mean, we have a long way to go until society, as a whole, recognizes how it is appropriate to teach young children. And I think a lot of it is due to No Child Left Behind. And a lot of it is the hysteria about test scores, and for good reason. Principals and teachers get punished by test scores."

Nonadopters were also asked if they felt they could adapt or experiment with REA as suited their needs (trialability). Darla and Alison both stated they felt REA could be implemented on a limited basis. Alison stated: "I think there are probably things you could pick and choose." Barbara stated she sometimes used images of REA in her work. She explained, "There are examples and images I use. I love the image in one of the Reggio slides with about a 10-month-old baby sitting in the middle of a circle of paint. There are some wonderful images that help tell the story." She also stated that she felt REA was very culture specific and could not be entirely reproducible in other cultures.

With regard to observability, Darla perceived the need to observe models of REA, stating, "I think we would all need to see models of it if we were going to try to implement that kind of approach in South Carolina. That would be a good starting point." She also noted there was once an REA school in her area and that the director of that

school had made several presentations at her institution, but that the director was no longer with the school and the school was no longer using REA. She did have videos of the director's presentation and she felt this was helpful in making REA observable for her students. Alison also mentioned an REA preschool program in her area, but stated she visited only once in response to a workshop presentation that was offered by the preschool. She stated a need to have her students observe the school and expressed her own desires to "work in a classroom with children and Master teacher in Reggio. I would love to experience it for myself and learn that way. That would be great."

Barbara stated she did not perceive REA as observable in that there were not many schools in her area utilizing the approach, and she doubted any of her colleagues who were primary-grade focused would know much at all about it. She also found REA unobservable on her trip to Reggio Emilia, Italy:

> I have to say that my experience on that trip had some disappointments. We were not able to see any children in classrooms and we were not able to take any pictures….It really occurred to me that this was like the Emperor's Clothes, that they were talking about something but not really letting us see it. We toured centers, but we weren't able to tour any centers with children.

All adopters perceived a rationality advantage of REA in terms of REA being an effective way to reach the goal of appropriate and quality education for young children. Mary perceived REA offered some convenience advantage, stating "I've heard teachers who use [REA]…say that they do more activities that really covered standards than they

would if they had planned a thematic unit." And Fran described significant potential advantages of project work for young children, particularly African American children, if it were utilized by teachers, stating:

> [F]or African American children, I contend that the Project Approach would actually be very relevant….African American children learn better in collaboration and groups. Projects lend themselves to that. And so I think, if we actually used it more, it could actually be a very good teaching curriculum for the African-American child. It also lends itself to activity, and my research implies that African-American children learn so much better by fully engaging. And I know that children learn by doing and that sort of thing, but because of the type of personalities and the culture, the social culture of African Americans, I think the Project Approach would be very relevant. I contend that the culture of the classroom contributes to the achievement gap, and I think the Reggio Project [approach] could actually change the cultural of the classroom.

Likewise, Judy perceived REA offered a number of potential rationality advantages, especially for children in South Carolina:

> "[REA] is an appropriate approach that can be really powerful with all children and especially in South Carolina with the kind of issues we have here with race and poverty.

> A person who really understands Reggio would understand how appropriate this approach can be, with particularly kids who are having very unsuccessful experiences in school right now, who are not engaged in a process, or in a school where there is really not a teaching group of people who can address their needs appropriately."

However, Judy also perceived REA would be costly in terms of time and "commitment."

Ben perceived rationality benefits of REA, stating REA modeled for students an exemplary way of interacting with, respecting and valuing young children, in trusting children enough to let them lead and direct their learning. Yet, he perceived there were high costs associated with REA and that those "running the Reggio foundation" were "canonizing everything" and were "very entrepreneurial with [REA]." He posited that costs may prohibit trialability and access to REA, suggesting, "They're going to do to themselves what High/Scope has done, which is price themselves out of the market."

With regard to compatibility, all six adopters described REA as being highly compatible with their own personal views, beliefs, and past experiences. Adopters mentioned REA's child-centered focus, attitudes of respect and value for children, involvement with families and communities, REA's methods for engaging children in learning most often when describing REA as compatible with their own personal views and beliefs. However, all six also described REA as being highly incompatible with current ideas and practices about ECE they perceived to be in public and private contexts in South Carolina. For instance, Fran described REA as incompatible as with the standards-based approach in public education in South Carolina, citing: "Public schools,

you know, have your standards and you have things set. With Reggio, you have to be able to go with the children. The culture in our school system won't allow our students to do that."

Ben and Rhonda both described cultural incompatibility with REA. Ben perceived REA's focus on art and relationships over academics was culturally incompatible with the needs and goals of ECE in South Carolina, and Rhonda stated succinctly, "You can't do Reggio really in America." And Fran, Judy, and Rhonda all mentioned the Project Approach by Katz and Chard (2000), as being an appropriate and compatible adaptation of REA for use in SC schools, although Judy expressed concerns about teachers misapplying project work because they lacked a good understanding of the complex ideas associated with project work and REA. Rhonda perceived the Project Approach was compatible not only with her beliefs about curriculum but also with the standards-based approaches used in public primary ECE settings. She reported that project work was better than the more teacher-directed, thematic-units approach typically used in child care settings in SC, suggesting it took children's learning to a higher level and allowed them to study topics that were "meaningful and relevant" to them. Rhonda stated she thought project work was more compatible with public primary level classrooms than with child care settings because many child care programs in the state struggled to meet the most basic levels of quality, such as teacher-child ratio, and were not as concerned with curriculum.

Judy stated she perceived REA was highly compatible with her own beliefs and values, but felt compatibility was "very dependent on its location. It is person specific…It's entirely dependent on the dynamics of any particular school or school

district." She stated she felt REA was incompatible with the current focus of school districts in her area, explaining, "Well in our district, which is a big urban district with some very high poverty and low-performing schools, the administration's focus right now is just raising test scores."

Ben also perceived REA as compatible with his own beliefs about young children, but was "contrary to the whole system" of education at the present time. When asked how relevant he perceived REA to be for education in South Carolina, he explained:

> It's not very relevant because we're all standards based, and this is a completely opposite approach. But that makes it even more important because the standards-based stuff is going to crumble and fall one of these days—we have a 50% drop out rate, you know—this [standards-based] approach is not working. And, at some point, people are going to wake up and say…"We've got to have alternatives. This is not going to work." And we need to open the door and get rid of some of these standards that are so rigid so that we can really begin to educate children, all children. Reggio shows us one way to do some of that.

With regard to complexity, all six adopters perceived REA as complex and difficult to understand and implement. Although Mary stated learning about REA was "easy" for her but difficult for her students." Judy described REA as "complex" and "harder for people to wrap their heads around" and "not for everyone." And Ben perceived the approach as "very hard" for students, noting: "I don't think they can get it

[REA]. I didn't get it until I saw it." Likewise, Mary stated her students "never really get it" and when asked why she thought students had trouble understanding REA, Mary posited:

> "I think it's because they've never seen a classroom. And I think that what they see in the public schools is academically driven, drill kinds of things, that that philosophy is somewhat alien. It's almost like, 'Yeah this is a person from the Ivory Tower talking some school.' So, it's like, I can't get them to connect to it.

Fran also perceived her students had difficulty understanding project work because they had never seen or experienced anything like it for themselves. She also felt her students did not have creativity needed to manage more open-ended approaches. She explained, "Many of our students…need that kind of guidance of timetables and specific content and curriculum they have to follow. Reggio lends itself to a lot of creativity, and I'm not sure that we are at the top of our peak in that right now." Barbara also perceived her students "need more experience" before being ready to implement the approach, which she described as "sophisticated" and better suited to "an advanced level" of teachers.

Further, all adopters with the exception of Judy, perceived REA was open to adaptation (trialability) and re-invention so as to better suit their needs and contexts. For instance, Mary stated: "I think [Reggio is] adaptable….You could not recreate the Italian culture here, but I do think you would use much of what's philosophically valuable in a program here." Judy expressed concerns, however, over attempts to adapt or partially

implement REA, stating, "If you are going to approach changing the classroom to use a Reggio-inspired approach, I think you have to use all of it. Although she described experimenting with REA herself, noting how she "explored it, and tested and tried out different interpretations or applications of it, or just tried things out based on questions that I had" she was concerned with attempts to re-invent REA or implement only aspects of it by those who did not fully understand "the much more complex ideas behind Reggio."

With regard to observability of REA, all six adopters described how they had observed REA programs or how they made REA observable to their students. Adopters reported their students read about REA in textbooks or saw slides and videos they presented in class or heard presentations by experts in REA. Judy's and Rhonda's had access to REA schools in their area and both adopters implemented REA in their on-site child-development centers. Four adopters had visited REA schools, two went to Italy and one went to St. Louis. The other adopter, Mary, had visited REA programs in the state, one of which was no longer an REA program. Fran reported public schools in her area demonstrated project work and that her students conducted project work during their field experiences. Judy stated she felt REA was an observable approach but that it was "difficult to find…really top, high-quality classrooms that are acceptable."

Research Question Two and Subquestions

Quantitative Survey Data

Adopters were asked to describe how they used REA in their work to address research question two. One fixed-choice item was included on the survey asking adopters to identify the types of courses in which they included REA from a list that

included: (1) child growth & development, (2) ECE curriculum, (3) child or educational psychology, (4) ECE or content methods, (5) ECE history/foundations, and (6) field experience/clinical. Participants could choose all that applied. They could also choose "other" and provide a description of the type of course in an open-response text box.

As shown in Table 22, ECE curriculum courses were the type of course REA was most often included, followed by ECE Content/ Methods courses. Fewer participants stated REA was included in child growth and development courses or in field experiences. Other courses listed by participants were math and literacy content courses, an issues and advocacy course, art, music and creative expressions courses, teacher as researcher course, elementary education courses, and a technical school's general seminar or "overview" course.

Table 22.

Types of Courses that Include REA

Types of Courses[a]	Count
ECE Curriculum	23
ECE or Content Methods	18
Child Growth & Development	13
Field Experiences/clinical/practicum	10
ECE History/Foundations	7
Other[b]	7
Child or Educational Psychology	1

[a]. Participants could choose from all that applied. [b.] "Other" courses listed by participants included: Math, Issues & Advocacy, Art & Music methods, Teacher as Researcher, Creative Expressions, Overview, elementary education courses, graduate class, and literacy.

Open-Response Data

One item was included on the survey instrument asking participants to describe how they used REA in their work. Twenty-seven participants provided open-text responses. Twenty-five provided information on types of courses as well as methods or activities they used to teach REA to students, and two identified only the types of courses they taught that included REA. The text was analyzed in two ways. First, the researcher looked at the various types of courses participants described, such as methods, curriculum, and child development courses, and graduate and undergraduate programs. Nine different types of courses were mentioned by participants, namely: child development, ECE curriculum, art/creative experiences, methods (math, science, literacy, elementary), classroom management, teacher preparation, teacher as researcher, and graduate, doctoral seminar, and undergraduate courses. The most cited type of course in which REA was included was ECE curriculum courses, with graduate courses the next most mentioned type.

Next, the researcher looked at the ways REA was included in participants' courses and developed four levels of implementation based on the teaching methods or activities described. The first level of implementation reflected the fewest activities (typically just one or two) and the most teacher-directed methods, such as lecture, class discussions and reading assignments. The second level of implementation reflected level one activities as well as one other strategy for engaging students with REA, typically a project or a writing or research assignment. The third level of implementation reflected levels one or two activities and also involved students in observing REA practices in ECE settings. The highest level of implementation, level four, involved students in applying

REA principles/practices in context with young children. Ten participants described using REA at level one, eight participants described using REA at level two, 4 participants used methods at level three, and no one reported using REA at level four. No participant described using REA in context with young children in the open-text responses.

Level one implementation included the most teacher-directed activities such as lectures, teacher giving examples, teacher presenting ideas, class discussion, and reading assignments about REA. For example, one participant wrote, "Students are assigned journal readings about REA - Sections of text about REA are emphasized - Students are taught that REA is one of four strategies recognized by SC Dept of Ed for preschool curriculums [sic]." And other wrote, "I discuss this approach in my classes briefly. However, there are no schools in our area for my students to observe." Another wrote, "For undergraduates, I present it as a model/example of DAP" And another stated, "I present the model, then ask students to brainstorm ways in which they can adopt it to their teaching situations (in the graduate programs)." Another participant described implementing REA as the Project approach in her courses, stating, "I discuss various curriculum models…I describe the Project Approach as "Americanized REA and this leads in to a discussion and study of REA." Some level one activities may have been more engaging than others. For instance, one participant wrote, "It is one of many models and as Frere has told us, we can learn from the social action of others but must make any model of education relevant to those it serves. For this reason I challenge my students to critically analyze what REA could look like in their educational communities."

More participants (n=10) reported implementing REA at level one than any other level. And most participants described presenting REA as one model of curriculum and comparing/contrasting REA with other models. For example, one participant wrote, "It is used in an Early Childhood Content and Curriculum course as one of the models students study and read about during the semester. One group of students does an in-depth project on the topic."

Additionally, three participants' reports of use were unclear and could not be categorized. One stated, "REA is presented to students in teacher preparation courses and it is expected that they would attempt to include aspects of the approach in their clinical experiences." This teacher may be describing either level one, emphasizing teacher presentation as the primary method for using REA, or (s)he may be describing the highest level of engagement, in which students applied REA principles/practices in context with young children. One participant described future plans for a study tour with students to Italy. In his/her open-text response, this participant also asked for assistance, stating, "Currently planning a May-mester (2008) trip to Italy. Hopefully to visit [R]eggio [E]milia schools so students and I could learn more authentically. Any assistance you might provide would be helpful.

Interview Data

Interview participants provided essentially the same information in interviews that was shared in the open-text responses. Although identified as nonadopters, Darla and Barbara said they included some aspect of REA in their coursework, albeit in a limited way. Darla stated REA was included in her textbooks, and Barbara used occasional REA slides to illustrate specific ideas in her growth and development course.

Adopters also described using REA in a variety of ways. Mary reported that she included discussions of REA as well as some slides and videos in her courses. She also provided instruction in documentation but she did not explicitly connect REA with documentation. She also described project work in her courses. Fran provided instruction in project work, but stated the Project Approach was taught explicitly and not REA during field experiences.

Rhonda included explicit instruction on REA as a curriculum model in a materials and methods course, but in two other courses, one a creative experiences course and the other the supervised field experience, students were given opportunities to create documentation displays: "We have them practice doing documentation. And we have them incorporate work samples, photographs, captions, and an overall paragraph talking to the parents about what skills the children are learning while they're doing that." However, Rhonda noted, students had limited experiences with project work:

> We talk about projects in supervised field experience also. It's very hard for the students to actually implement a project, but we go through that planning process, looking at what children are interest in…We take them through that planning process and make them really listen to what's going on around them and find out what the children might be interested in.

Rhonda's students also visited a local REA preschool in the area as well as worked in the campus preschool that utilized REA principles, such as documentation of children's work. Ben also included discussions and readings of REA in both

undergraduate and graduate courses, and had students participate in light and shadow activities based on REA practices. He stated, however, that he spent only a day or two on REA with his undergraduates, but his doctoral students got more deeply involved in studying REA. Judy described implementing REA in a variety of ways and courses over her teaching career. As the director of her institution's on-site lab school, she has included REA in her work, particularly documentation strategies using the tools of technology, with undergraduate and graduate students as well as in-service ECE educators. Judy noted that over the years, she has had students conduct projects of their own and document their project work.

Open-Response Data

To address research Subquestion 2(a), "What reasons do teacher educators give for using, rejecting, or discontinuing use of REA in their work?" open-text and interview data was collected. Two items on the survey asked participants' to list reasons for implementing and/or rejecting/discontinuing the use of REA in their work

Thirty participants responded to the open-response item on the survey that asked them to describe what originally interested or prompted them to include REA in their work. Motivations fell into three basic categories: (1) Initial channels of communication prompted uses; (2) Principles or practices of REA prompted use, and (3) other motivations/reasons.

Communication channels were divided further into 6 subcategories similar to the communication channel categories used to analyze initial communication channels and professional development activities for subquestions 1(b) and 1(c). These communication subcategories were: (1) visits to REA schools, (2) mass media (books,

videos, exhibits, slides, etc.), (3) coursework, (4) conferences, and (5) colleagues. The most mentioned prompt or motivation for learning about REA was a visit to an REA school, followed by mass media channels (books, videos, exhibits, etc.), and coursework and colleagues. One participant stated (s)he was prompted by a visit and a conference about REA.

Eleven different principles or practices of REA were cited by participants as prompts for learning more about or using REA in their work. REA's focus on the child or the independence/freedom given to children was the most mentioned REA principle/practice. The next most mentioned prompt was that REA was a "developmentally appropriate" approach, followed by REA demonstrated constructivist theory. A few participants mentioned the design and attention to the environment as a prompt for learning more/using REA as well as children's use of media and documentation to express/reflect ideas, and project work. Also mentioned but only one time each that REA was an authentic approach, REA was a holistic approach, REA's focus on learning through exploration and discovery, REA's emphasis on social development, and REA's focus on reflective thinking."

Five other prompts were mentioned and included under the "other" category. The most frequently mentioned "other" prompt was that REA was a curriculum model that students needed to know about or was content included in textbooks and coursework. As one participant explained, "Since I teach ECE courses, it is important for me to know about what is going on (especially in terms of approaches) in ECE classes." Another wrote, REA was taught "as one of several curricular approaches" because it is "widely accepted" and "included in several of our adopted textbooks." Similarly, other

participants stated the prompt for learning more about/using REA was that REA was model curriculum they felt students should be familiar. For example, one participant explained, "I wanted to be sure my students in our early childhood master's program…were familiar with and knowledgeable about several models of curriculum in ECE; REA is an important model to know."

Two participants stated they found REA interesting, one said the prompt was that REA was "akin" to Montessori, and one simply stated, "I wanted to know more." And one participant stated that the prompt for learning more about REA/using it was that (s)he has seen proven results. This participant wrote, "I have seen children who were labeled as 'slow learners or learning disabled' blossom with a 'Reggio' type of environment." This same participant described a strong connection to the approach, stating, "When one sees the light of enthusiasm turned on when a child has the opportunity and permission to direct their own learning, then one cannot help but be converted."

Interview Data

The researcher asked all eight participants what, if anything, first interested them to pursue information or use of REA. From the framework of diffusion theory, the researcher was interested in exploring pre-existing conditions, including the values and norms of individuals' social contexts, their previous practices, felt needs, and levels of innovativeness that may have influenced their initial exposure to REA as well as subsequent information-seeking behaviors.

Nonadopters were asked what, if anything, they found interesting about the approach or why the pursued information about REA. Darla stated she first learned about REA through a conference she attended in South Carolina and pursued information as a

result of the presenter in the conference being in her local area. The presenter had come to her school and made presentations to her students, and Darla also reported visiting the presenter's REA school and being impressed by the building's design. Alison stated she decided to pursue additional information about the approach as a result of a workshop hosted at a local REA school. She noted her professional development activities were confined to local conferences and workshops and that she decided to go the REA workshop because it was local, she had time in her schedule, and she knew and respected the program's director. Barbara described the connections she made between her work with another infant/toddler program and REA. And upon visiting her local REA program, Alison stated she strongly connected REA with her own previous beliefs, values, and ideas about good ECE practices:

> I love the openness of Reggio. I am very comfortable with open-endedness. Some people are not. Some people are threatened by it, but I really am a creative person, and I appreciate anything that encourages creativity and thinking for children. I don't like rote learning. It's boring. Learning ought to be fun and it ought to engage children. It just shouldn't be me telling a child or drilling a child or flash-carding a child or work booking a child to death. That to me isn't learning. I just don't like it and I never had. And I didn't do a lot of that when I was teaching K4...I just know when I walked into that one [Reggio-inspired]

> program, I felt so at home. It was wonderful for me. I just thought, 'Oh, this is grand.'

Adopters were also asked what they found interesting about the approach and/or what prompted them to learn about and use REA. One adopter, Judy, who had extensively implemented REA in her work, recalled first learning about REA in the mid-1990s from reading *The Hundred Languages of Children* by Edwards, Gandini, and Forman (1993) as part of her doctoral work out-of-state. She also stated her motivation for pursuing information about REA was the connections she made between REA and her own research interests. Judy vividly described making connections between REA and her prior practices and felt needs:

> When I first started reading *The Hundred Languages of Children* book, which was the first thing I did, I was really intrigued with it because of a lot of things that I had been thinking about for a number of years just kind of clicked and made sense. I didn't have a name before, but then I had a name to wrap around it and a theoretical construct, too. So, it all made sense to me….It makes complete sense to me on many, many levels. And it supports and confirms a lot of the experiences that I have had as a practicing teacher and questions that I have had. My own dissertation research….and my own experiences with trying to teach documentation and strategies to students as a critical thinking tool on

> several levels, you know, this was all making a lot of sense to me.

Mary said she was motivated to learn more about REA as a result of a presentation made in a state professional conference. She described connecting with the idea of documentation, one particular element of REA. She stated, "I was intrigued by the documenting of children's work…the actual doing the displays and allowing the children to revise some of the work they had done previously. I just thought that seemed so logical."

Ben reported his motivation for pursuing information about REA stemmed from his interests in play-based approaches and connections he made between his interests in that topic and REA. And Fran described her motivation for pursuing information was more academic. She reported a need to learn more about REA as a result of growing interest in the field. She stated: "It seemed to me that a number of people had an interest in it in the field, and I had limited knowledge, so I was just seeking to build up my knowledge base."

Most of the interview participants recalled how they first learned about REA. Two participants, one an adopter and one a nonadopter, reported first learning about REA from the same person who presented at a State ECE conference and whom they described as "very instrumental" in introducing REA to educators all over the state. This presenter also implemented REA at a child development center on a military base in the state; however, it was reported that this presenter had been gone from the state for a long time, and the center no longer used REA.

In addition, seven of the eight participants described their motivations to pursue information about REA stemmed from connections to previous ideas, interests, and felt needs with philosophies and practices of REA. And two interview participants, one nonadopter and one adopter reported the approach confirmed their pre-existing beliefs and ideas about education.

Quantitative Survey data

Two fixed-choice response items were included on the survey to collect data to address subquestion 2(b). Participants were asked if agreed/disagreed that some elements of REA were more relevant to their work than others and if they agreed/disagreed that some elements were irrelevant to their work. Participants could also respond "I don't know enough about REA to respond." As shown on Table 23, over half (29) the participants responded "yes" to the question "Do you feel some elements of REA are more relevant to your work then others?" And most of the respondents who answered "yes" were adopters. About the same number of participants (30) responded "no" to the question, "Do you feel some elements of REA are irrelevant to your work?" And most of the respondents who answered "no" were adopters. Ten participants responded "I don't know enough to respond" to both questions.

Table 23.

Relevant and Irrelevant Elements by Adoption Groups

Survey Questions 17 and 19		Non Adopters	Adopters	Row Totals
Q17: "Do you feel some elements of REA are more relevant to your work than others?"				
No	Count	4	9	13
	% of Total	8.2%	18.4%	26.5%
Yes	Count	9	20	29
	% of Total	18.4%	40.8%	59.2%
Don't know enough to respond.	Count	7	3	10
	% of Total	14.3%	6.1%	20.4%
Total	Count	18	31	49
	% of Total	36.7%	63.3%	100.0 %
Q 19: "Do you feel some elements of REA are irrelevant to your work?"				
No	Count	7	23	30
	% of Total	14.3%	46.9%	61.2%
Yes	Count	4	5	9
	% of Total	8.2%	10.2%	18.4%
Don't know enough to respond.	Count	7	3	10
	% of Total	14.3%	6.1%	20.4%
Total	Count	18	31	49[a]
	% of Total	36.7%	63.3%	100.0 %

[a] Two participants who never heard of REA did not respond to these items.

Open-Response Data

In addition to the fixed-choice items asking participants if they agreed/disagreed that elements of REA were relevant and irrelevant, two open-response items asked participants to describe relevant and irrelevant elements of REA. Twenty six participants responded to these two open-response items. Nine participants reported that REA's child-

centered focus as it pertained to curriculum and teaching practices were relevant. For example, one participant stated, "The Reggio attitude of 'respect for the child's rights' is very powerful and something I think we should emulate. It is like taking our child-centered or inquiry or individualized instruction approach to another level. I think that is very relevant." And another wrote that "the attention to children's natural development" was relevant. One participant who was the director of a Montessori program perceived REA's "idea of following the child" as relevant and "integral to Montessori."

Eight participants mentioned REA's approach to working with parents and families or the idea of involving parents as espoused by REA as relevant. For instance, one participant wrote, "Meaningful partnerships with parents are essential in infant/toddler programming. Reggio's approach to working with parents is exemplary" and another wrote, "Having parents as partners" was relevant. Another participant wrote as relevant, "The idea of involving the three agents of learning: children, parents, and teachers" and another stated, "The recognition of the importance of the connection between teachers-children-families-communities" was relevant. And another stated, "I discuss the family-community connection of this curriculum in my Family-Community Relationships course."

Several participants described Project work, the Project Approach, and ways children go about learning with REA as relevant. For instance, one participant stated, "I teach and demonstrate the project approach to my preservice teachers." Another stated, "Long term project provide children [an] opportunity to explore, investigate, and problem solve" and another wrote, "child centered - children explore ways – does a lot w/light – children are the predictor of the outcomes – children set forth to find answers." And

another perceived as relevant, "Constructivist learning; learning by doing; process over product; observation" and another wrote, "[H]ands-on child selected activities, children working at their own pace and according to their learning style, children learning from one another problem solving."

Five participants described specific REA teacher practices as relevant. For example, one wrote, "Teacher as learners. Teachers observe children closely and learn from them and share knowledge with other professionals." Another stated, "Teacher's abilities to observe children and develop curricula that is appropriate for the specific developmental stages/needs of children she/he works with" as relevant. One participant described as relevant a specific strategy for developing "writing skills" she attributed to REA. (S)he wrote, "[The] use of print based texts to study design of illustrations and writing styles to assist in development of particular ideas child would like to inquire about related to their burgeoning writing skills." One participant wrote that "assessment" was relevant but did not link it to a particular element of REA. (S)he explained further her belief that "teachers need training to observe and keep checksheets or anecdotal records on students rather than traditional assessment tools to not only recognize student strengths/weakness, but also their interests."

Three other participants described REA as a model approach and perceived it was relevant to study as a one of several models or methods of curricula. For example, one participant wrote, "In an effort of having students leave my courses with basic information about all 4 approved methods of early childhood education, I believe that understanding the basic principles of the method is very important." Similarly, another participant perceived REA was relevant as "curriculum comparison" between "[REA]

and Creative Curriculum, High/Scope, Montessori, Project Approach, Direct Instruction, etc." And yet another stated, "I compare this to other curricula models in my Introduction to Early Childhood course."

One participant described REA's model of inclusive education was relevant, stating, "Reggio…is inclusive of ALL learners, including those with disabilities. As an advocate for inclusive education in the U.S. I think this is a wonderful example to present to students." [emphasis participant's]. However, this participant also perceived REA was relevant because it differed from the "more standardized" approach used in U.S. schools. (S)he wrote, "It is more challenging (but still important, I believe) for students here to understand the open curriculum of Reggio because the current political climate in the U.S. supports a more standardized approach to education."

Seven participants responded to the survey item asking them to list those elements of REA they felt were irrelevant to their work. Two participants wrote that they perceived REA's child-centered approach to curriculum was irrelevant because it differed from the current practices and policies in U.S. and South Carolina schools. For example, one participant wrote, ""I feel that it is difficult in the era of standardized testing and state standards to completely implement a RE approach since it is based on student interest and needs. For most 4 and 5 year old teachers the RE curriculum needs to be modified to meet district expectations." Another stated she perceived REA was irrelevant because it was "very free – not much if any teacher directed activities – children are never made to do things unless it is an interest to [them]." Another stated, "I don't believe Reggio is used in the public schools nor in the Christian school; so spending a great deal of time on

Reggio wouldn't be beneficial for my students even though I think it would be wonderful for students."

One participant perceived REA's "focus on the arts reflect their culture…and has less relevance for us." Another stated, "Since we don't yet have a lab site, it is difficult to integrate all of the elements - such as space and environment." Finally, one participant wrote,

> I feel the whole approach is relevant. A child-centered project approach develops language, inspires interest, meshes with children's literature and language development, provides opportunities for recording language, helps children gain a sense of community, provide a comfortable child-centered environment. What is there not to like about it?

Interview Data

Nonadopters Darla and Alison both described REA's child-centered approach as compatible with personal beliefs and values. Darla stated she thought REA was relevant to her work as one of several ECE curricula models that her students needed to know about; however, she perceived REA as being better suited to students in "higher levels" of education suggesting it was not as appropriate as the thematic unit approach was for her students. She perceived documentation as relevant because it was "something that we teach any way. And that is very hard for our students. I'll have to say that." She did not perceive the "community involvement-parent piece" was relevant because "I don't think we have too much control over that part, but we do teach our students to involve parents

as much as possible." When asked if she thought REA was relevant to early childhood education in South Carolina, she described benefits of REA, noting REA "allows children to be children" and can help "children to think creatively." However, she also noted that REA was different from the current "push" in education in South Carolina as "driving [children] to succeed educationally….in a real academic type of way" and, therefore, perceived REA as irrelevant to South Carolina, stating, "[T]he way that I see Reggio is that the children drive the curriculum. I hope I'm not mistaken there. And I don't see us as being there. I am not sure that people here are able to do that."

Alison perceived the trust REA teacher have in children to be relevant. She also perceived the freedom given to children to chose activities and direct the curriculum was not relevant in either public or Christian school settings in South Carolina. She perceived REA's emergent curriculum as irrelevant to Christian schools in particular "because Reggio depends on the professionalism and knowledge of the teacher rather than on a purchased curriculum. I think most Christian schools are afraid to give freedom to the teacher. They want everything the same in every K4 classroom—they are tied to the purchased curriculum." Further, she believed REA was irrelevant to public schools because "they're trying to meet all the standards and the No Child Left Behind requirements. Now they're teaching to the test and they have to show that the kids are learning."

Barbara also perceived aspects of REA as relevant to her work and felt it was also relevant to South Carolina's goals in early childhood education. She described REA's focus on embedding children's culture and communities into caregiving practices as "very relevant," and thought REA could also "inform… how we work with children of

poverty," and how we "learn to bring the strengths of communities into our classroom." She described some "simple practices" as relevant to ECE teacher education, including, "revisiting your representations and the notion of coming back and revising and refining" along with "their approach to recycling" and "the notion of documentation, making visible what we do so we can remember what we learned, I think that is really valuable." However, Barbara perceived documentation as described by the Project Approach's by Katz and Chard (2000) as involving "children more than the way I interpret the Reggio approach, which, in what I saw, was teachers working on making these neat scrapbooks."

Adopters described a number of elements of REA they perceived as relevant. Rhonda perceived REA's approach to documentation, its focus on children's interests, and the way it integrated curriculum as the most relevant aspects of REA. However, she also perceived REA's relevance as difficult to communicate to her students and to those working in ECE in South Carolina, explaining,

> [W]e have to be careful not to make [REA] so lofty—I can't think of a better word—that the average teacher at, you know, 'Fred's Child Development Center' thinks, 'Well, I can't do that. That's just irrelevant.' You know, we have to make it relevant. So we are kind of walking that fine line. We still want to teach the traditional preschool type of thing, but take it to the next step. It's hard for us to do 1,000 percent Reggio because, would that be relevant when they're going back into a classroom here and they're

> alone with 20 children? And that happens on daily basis I'm afraid.

Ben perceived REA's "respect for the rights of children" as relevant and thought "the way they interact with children, the adult-child interaction is really fantastic" stating "[I]t's what we ought to be trying to model over here." Like Rhonda, Ben did not perceive "all" of REA as relevant, "I don't think we'd ever want to adopt the whole thing." He perceived REA's focus on the arts was possibly irrelevant, "That's their thing, but I don't know that's quite as critical for us." He described REA as "a completely opposite approach" to the current "standards based" approach used in South Carolina schools, which elevated the relevance of REA to his work. He explained,

> But that makes [REA] even more important because the standards' based stuff is going to crumble and fall one of these days—we have a 50% drop out rate [in South Carolina], you know—this [standards-based] approach is not working. And at some point, people are going to wake up and say….we've got to have alternatives. This is not going to work. And we need to open the door up and get rid of some of these standards that are so rigid [so] that we can really begin to educate children, all children. Reggio shows us one way to do some of that.

Fran also perceived the Project Approach was relevant and stated, "I think the Project Approach would be very relevant…because [teachers] can plan weeks and weeks of activities around a particular theme. And I think that's very viable for them." She, too,

perceived it would be "difficult for us to do Reggio to its fullest extent...but [teachers] could certainly do a variation in Project Approach" She perceived REA's child-directed focus as irrelevant, explaining, "With Reggio, you have to be able to go with the children. The culture in our school system won't allow our students do that." Fran also perceived project work as a difficult approach for her college students, noting, "Our students lack the creativity to even perpetuate [emergent curriculum] themselves. They need that kind of guidance of timetables and specific content and curriculum they have to follow."

Mary perceived that "knowing about REA is all very relevant. I still see some cultural differences in the Italian culture that facilitate that philosophy that is different from our culture." She listed documentation and project work relevant and compatible with her work. Judy perceived REA as relevant to her own work as a teacher-educator and as child development program director. She perceived documentation as particularly relevant and was conducting her own research on documenting children's work utilizing the tools of technology. She also perceived REA as relevant to the work of her students and to the context of ECE in South Carolina, but perceived REA as difficult for teachers, especially new teachers:

> And most young teachers, you know, they are so overwhelmed with everything they have to look at, that they are realistic enough to say, 'I can't do this now, but it is certainly something that I would be interested in in the future.'…Also, the biggest stumbling block is that…they wouldn't get a lot of support. The biggest problem is not the teachers, it is the lack of support that they might get

> from their principals or their local districts. In many cases, they are not equipped with the kind of advocacy skills yet that they need to really be assertive about it without, you know, being scared they are going to get in trouble or something like that.

Research Question Three

Quantitative Survey Data

To address the third research question, the researcher analyzed only the quantitative survey data and conducted Chi-square tests of independence to determine if the proportion of adopters to nonadopters was significantly different across different demographic and professional variables including age, type of employing institution, years of teaching experience, or professional activities. These variables were categorical rather than continuous necessitating Chi-square tests for independence, which are used to indicate the "strengths of relationships" between variables that have two or more categories (Pallant, 2001).

To conduct the analyses, data were first dichotomized into adopter and nonadopter groups based on participants' responses to survey item 16, which asked how participants used or included REA in their work. Chi-square contingency tests were run between groups for variables of age, institution type, highest levels of education, teaching positions, current titles, years of teaching experience, annual incomes, number of professional organizations, number of annual state, national, and international conferences, and number of REA conferences, REA courses, and study tours taken.

Tests were run using the established confidence interval of 95% and an alpha value of 5%. Due to the low response rate, most tests required that the researcher combine response categories so that the lowest expected frequency in any category cell was 5 or more, the minimum expected cell frequency required to run the tests.

For the Chi-square test on the number of REA conferences/workshops attended, statements of the null and research hypotheses were as follows with the p-value = 3.37% $< \alpha = 5\%$:

H0: To adopt or not is independent of attending one or more conferences or workshops about REA.

H1: To adopt or not is contingent upon attending one or more conferences or workshops about REA

Based on a sample size of 49, the test statistic χ^2 (1) = 6.786 yields a p-value = 1.3% implying the null hypothesis is rejected at the 5% level. Thus the data, as set out in Table 24, showed the proportion of adopters who attended conferences/workshops about REA was different from the proportion of nonadopters who attended conferences or workshops about REA, and the difference in proportions was significant.

Table 24.

Number of Conferences about REA Attended by Adoption Groups

No. of Conferences about REA attended		**Non Adopters**	**Adopters**	Row Totals
None	Count	10	6	16
	Expected Count	5.9	10.1	16.0

Table 24, (Continued).

Number of Conferences about REA Attended by Adoption Groups

No. of Conferences about REA attended		Non Adopters	Adopters	Row Totals
1 or more	% within REA Conference	62.5%	37.5%	100.0%
	% of Total	20.4%	12.2%	32.7%
	Count	8	25	33
	Expected Count	12.1	20.9	33.0
Total	% within REA Conference	24.2%	75.8%	100.0%
	% of Total	16.3%	51.0%	67.3%
	Count	18	31	49[a]
	Expected Count	18.0	31.0	49.0
	% within REA Conference	36.7%	63.3%	100.0%
	% of Total	36.7%	63.3%	100.0%

[a]Two participants who never heard of REA did not respond to this item

To conduct the test on the number of study tours/visits to REA schools, statements of the null and research hypotheses were as follows with the p-value = 3.37% < α = 5%:

H0: To adopt or not is independent of taking one or more study tours of REA school(s).

H1: To adopt or not is contingent upon taking one or more study tours of REA school(s).

Based on a sample size of 46, the test statistic χ^2 (1) = 9.033 yields a p-value = 2.6% implying the null hypothesis is rejected at the 5% level. Thus the data as set out in Table 25, showed the proportion of adopters who participated in study tours/visits to REA schools was significantly different from the proportion of nonadopters who participated in study tours.

Table 25.

Study Tours/Visits to REA School by Adoption Groups

Number of Tours/Visits to REA schools:		Non-Adopters	Adopters	Row Total
None	Count	15	16	31
	Expected Count	11.5	19.5	31.0
	% within Tours REA	48.4%	51.6%	100.0%
	% of Total	32.6%	34.8%	67.4%
1 or more	Count	2	13	15
	Expected Count	5.5	9.5	15.0
	% within Tours REA	13.3%	86.7%	100.0%
	% of Total	4.3%	28.3%	32.6%

[a]Two participants who never heard of REA did not respond to the item about study tours

[b] Two adopters and one nonadopter also did not respond to the item about REA study tours

Demographic variables including age, institution type, education level, teaching position, current title, teaching experience, income, professional organizations, and non-REA conferences attended tested independent of adopting REA. But the results pointed

to two professional development activities, attending REA conferences/workshops and taking study tours of REA schools, as factors which influence the adoption of REA. Hence, it seems that adoption of REA requires exposure to REA and these two particular activities are particularly significant.

However, Chi-square tests identify significant relationships among variables and do not indicate cause-effect relationships. It cannot be ascertained from this analysis that attending conferences or taking study tours caused individuals to adopt or reject REA. Yet, the data did show significant relationships exists between adoption of REA and conference attendance and touring or visiting REA schools.

The data also suggested the need for three additional Chi-square tests between knowledge of REA and attendance at conferences and study tours by adoption groups. However, data was limited and many individual cells contained less than the 5 per cell needed to run the additional Chi-square tests. However, as set out in Table 26, a cross tabulation matrix of knowledge and adopter groups by REA conference attendance revealed more nonadopters (14%) than adopters (8%) with knowledge of REA also attended one or more conference about REA, and the spread between adopters and nonadopters on conference attendance increased as knowledge about REA increased.

Table 26.

Adoption Groups' Knowledge of REA and REA Conference Attendance

	Nonadopters		Adopters		
Knowledge Groups	No REA conferences	1 or more conferences	No REA conferences	1 or more conferences	Row Totals
No/little knowledge	3	0	0	0	3
Knowledge	6	7	5	4	22
Very Familiar	1	1	1	8	11
Considerable Knowledge	0	0	0	13	13
Column Totals	10	8	6	25	49[a]

[a] Two participants who never heard of REA did not respond to the item about REA conferences.

In addition, a cross tabulation (Table 27) of knowledge and adoption groups by study tours/visits to REA schools taken (N=46) showed slightly more adopters (6.5%) than nonadopters (2.2%) with knowledge of REA also took one or more study tours of REA schools. And the spread between adopters and nonadopters who took study tours increased as knowledge about REA increased. Knowledge of REA as well as professional activities may be related to adoption decisions. More data would be needed to investigate this hypothesis further using Chi-square tests of independence.

Table 27.

Adoption Groups' Knowledge of REA and Study Tours Taken

	Nonadopters		Adopters		
Knowledge Groups	No. REA Tours/Visits	1 or more Tours/Visits	No REA Tours/Visits	1 or more Tours/Visits	Row Totals
No/little knowledge	3	0	0	0	3
Knowledge	11	1	6	3	27
Very Familiar	1	1	5	3	10
Considerable Knowledge	0	0	5	7	13
Column Totals	15	2	16	13	46[a]

[a] Five participants did not respond to the item about REA study tours.

Summary

The data showed no significant differences between adopter groups on variables for age, annual income, years of teaching experience, levels of education, numbers of professional organizations and conferences attended, including state, national, and international conferences attended. Chi-square tests did show differences between adoption groups for two professional development activities, attending conferences about REA and taking study tours of REA schools. The data showed that adoption was contingent upon either of these two activities. Tests could not be conducted for the variable of knowledge as too few data were available. However, it stands to reason that these significant professional development activities influences knowledge as well as activities and that knowledge of REA is closely related to adoption.

CHAPTER FIVE

CONCLUSIONS AND DISCUSSION

Overview

The purpose of this study was to explore and describe the diffusion of the Reggio Emilia Approach (REA) among early childhood teacher educators in higher education in South Carolina and to answer the overarching research question in this study: "To what extent is REA diffusing among ECE teacher educators in SC?" Teacher educators were chosen as the target population for the study because they prepare the early childhood workforce in the state; consequently, what teacher educators know and do influences the knowledge and skills of future early childhood professionals. Early childhood teacher educators who have applied REA in their teacher preparation programs describe the approach as both challenging and re-energizing the field of early childhood education (Cadwell, 1997; Fu, Stremmel & Hill; Goldhaber, Smith, & Sortino, 1997; Moran, 2002). However, REA is a complex approach built out the experiences and traditions of Northern Italy and is not easily understood or implemented in ECE settings in the U.S., particularly in smaller states such as South Carolina.

Early childhood education in South Carolina, as in other southern states, faces a number of daunting challenges, including increased diversity, high numbers of children deemed not-ready for school, and high numbers of children and families living in poverty (South Carolina Budget & Control Board Office of Research and Statistics Service (2006 a). Early childhood professionals along with government, business and community leaders in South Carolina continue to work to find solutions to the state's pressing needs

by raising standards of early care and education in the state (Task Force on Early Childhood Quality Standards, 2007). REA may serve as a useful innovation for early childhood education in South Carolina; however, REA's potential as an exemplary model for use in South Carolina was unknown at the onset of this study as there are few REA programs in existence in the state and seemingly little support for progressive, child-centered approaches at the current time. It was unknown if or what the ECE community in South Carolina knew about REA, and if it was considered a viable approach for use in training ECE teacher educators among teacher educators serving in higher education in the state.

Rogers' (2003) diffusion of innovations model was used to guide the research in this dissertation study. Data was collected to reflect the four main elements of Rogers' model that were used to explain the diffusion of the innovation: (1) the participants' knowledge and use of the innovation, (2) the time associated with diffusion and perceptions of the innovation, (3) the communication channels through which information about the innovation spread, and (4) the social system or context of diffusion.

In this chapter, the major findings related to participants' knowledge and use of the innovation are set out, followed by a discussion regarding the rate of adoption in terms of the number of years REA has been used and participants' perceptions about the attributes of REA. Next, the findings related to the channels of communication involved in diffusing REA in South Carolina are described and that is followed by a discussion about the constraints or barriers to REA. Finally, a summary of the conclusions, the study's limitations, and suggestions for future research are presented.

Major Findings

Knowledge of the Innovation

Knowledge of an innovation is a critical element in diffusion in that the more knowledge participants have about an innovation, the less uncertain they tend to be about its use and the more apt they are to make a decision to adopt or reject the innovation. In this study, about 90% of survey participants reported they had knowledge of the approach and knowledge ranged from more than a little to considerable knowledge. In addition, Participants were asked in an open-response item on the survey to describe or define REA as a way of further demonstrating their knowledge of the approach. The data from this item showed that participants were able to identify many of the core elements of REA along with many of the major theories and theorists associated with the approach. Most participants described REA as a "child-centered" or "child-directed" approach to curriculum, or associated it with other similar curriculum approaches, such as the Project Approach or the Montessori method. Some participant definitions, however, demonstrated limited knowledge of REA in that descriptions were very general statements about REA, which reflected that many participants' self-reported their level of knowledge as only awareness of REA.

The interview data also showed that those participants who stated they did not know much about the approach or had only "sufficient" knowledge of it also reported there was much about the approach they liked and much about it that "made sense" to them when they first came into contact with REA. One interview participant reported making strong connections with REA on a visit to a local REA school. She described

numerous areas of commonality with what she saw at the REA school during her visit and with her own practices when a former preschool teacher.

Rogers (2003) noted that innovations are often evaluated in "relationship to existing practices that are already familiar to the individual" (p. 254). It was clear from the interview data that teacher educators' previous knowledge and experiences in early childhood education helped them relate to and define REA. Terms used participants such as "developmentally appropriate," "best practices," "hands-on learning," "child-directed," "child-centered," and "akin to Montessori" suggested participants were defining REA in relationship to other more familiar theories and frameworks. Most participants described REA mainly as a type of curriculum, which supports Goffin's (2002) assertion that U.S. educators typically define REA in terms of curriculum or as a curriculum model even though REA proponents resist such a label (Gandini, 1993; Rinaldi, 1993). It is unclear if teacher educators have developed misconceptions about REA based on their previous knowledge of "child-centered" theories and approaches. Some teacher educators who reported having very little knowledge of the approach stated they did include at least some information about REA in their programs, which suggests that some prospective early childhood teachers and caregivers may be getting very little or very general information about REA as part of their preparation, or worse, that they may be getting inaccurate information about the approach. Findings in this study revealed that teacher educators in South Carolina believe they need to increase their knowledge about REA and that more professional development about REA was desired.

In addition, the survey data suggested a connection between participants' level of knowledge and their decision to adopt the approach for use in their work, although Chi-

square tests could not be run to confirm the significance of knowledge and adoption decisions. A review of cross-tabulated data showed that participants who reported having the least amount of knowledge were all nonadopters and participants who reported having the greatest amount of knowledge were all adopters. This finding suggests that knowledge is a factor in adoption decisions although Chi-square tests between adoption groups on the variable of knowledge could not be conducted due to low numbers in each cell.

Communication Channels and Professional Development Activities

Opportunities to gain information about REA and the communication channels through which information about REA may be diffusing among teacher educators in South Carolina were also investigated. The survey data showed that most participants reported first learning about REA through coursework and through books, articles, or videos, which represent mass media channels. Fewer reported learning about REA through interpersonal networks, such as colleagues, conferences, or visits to REA schools. Only three participants reported first learning about REA as a result of a state conference.

With regard to the professional development activities related to REA, about 67% of survey participants reported they had attended between 1-3 conferences about REA, whereas 32% reported they never attended a conference about REA. Further, 30% of survey participants reported they took a course about REA and about 33% participated in a study tour or visited an REA program. Chi-square tests of independence revealed that two professional development activities, attending a conference about REA and taking a

study tour/visiting an REA program, were significant in that decisions to adopt REA were contingent upon either of these two professional activities.

Participants were also asked in survey and interview questions what, if anything, they believed they needed to better understand or utilize REA in their work. From their responses regarding professional development, the communication channels and the types of information participants felt were needed to understand REA were inferred. Survey findings showed many participants reported a need for more conferences and workshops about REA, and from these findings it was inferred that teacher educators needed greater "awareness" knowledge about REA. The most frequently mentioned professional development activities participants stated they needed were opportunities to observe or visit REA programs and to see REA "in action." In fact, the need to visit/observe REA programs operating in South Carolina was mentioned almost twice as many times as the need to visit REA programs operating in Italy. Teacher educators also reported wanting more "actual experiences" related to REA, such as opportunities to dialogue with teachers who use REA and opportunities to participate in REA programs and experience REA for themselves. From these responses, it was inferred that participants desired more how-to and principles knowledge to help them better understand how REA functions.

Interestingly, although 25% of survey participants reported they had considerable knowledge of the approach, only 9% of survey participants (n=8) reported they made one or more presentations about REA at a state conference and only 2% (n=1) reported authoring a publication about REA. Further, whereas eight interview participants reported they had studied REA ten years or more, only one interview participant reported she was actively working on ways to share with colleagues her expertise in REA using

both through Internet and print outlets. Clearly, more state as well as local professional development activities are needed to diffuse basic information (awareness knowledge) as well as how-to (procedural) knowledge about REA among teacher educators in higher education.

Rogers (2003) noted that information needed for adoption or rejection decisions typically travels through both mass media and interpersonal networks. Findings in this study showed that participants reported gaining initial knowledge of REA through a combination of mass media (books, textbooks, articles, conferences, videos, exhibits), through interpersonal networks (colleagues, visits to local programs), and through the Internet, a communication channel not initially considered by the researcher prior to instituting this study. Open-response and interview data also showed that most adopters stated that visits to REA schools and communication with colleagues encouraged their decisions to pursue additional information and adopt REA for use in their own work.

Rogers (2003) emphasized the important role local, professional networks play in diffusing an innovation, especially among individuals who are late in adopting an innovation (late majority), noting that face-to face exchanges between individuals similar in a many ways are powerful influences over adoption decisions. According to Rogers, those individuals in the late majority often rely more heavily upon localized, social networks and upon the experiences of close peers than they do upon objective or scientific information to help them make adoption or rejection decisions (Rogers, 2003). Likewise, Fullan (2001) observed that "it is the local networks that count because it is when [individuals] are learning in context that knowledge becomes specific and useable" (p. 105).

Use of REA

According to Rogers (2003), implementation of an innovation and acquisition of knowledge signals the diffusion of an innovation. Implementation, or use of REA, in this study was defined as teacher educators' providing explicit instruction in or demonstration of the principles or practices of REA in their ECE courses. The survey data showed that about 60% of participants reported they were adopters of the approach, meaning they implemented REA or some aspect of it in their ECE teacher education program in South Carolina. And about 40% of the survey participants stated they were nonadopters or did not implement REA in their work. However, interview data showed that nonadopters did include at least some information about REA in their coursework, and that they did so because REA appeared in new textbooks, was widely accepted in the field as a viable approach to ECE, and was an approach their students needed to know about. Even interview nonadopters who reported having little knowledge about REA reported they included at least some information about REA in their coursework. However, most participants stated that they perceived of REA as predominantly a model of curriculum and reported they compared and contrasted REA with other current curricula models. The implications of these finding are that knowledge of REA seems to be diffusing among teacher educators in South Carolina at a faster rate than adoption, but that prospective ECE teachers and caregivers trained in South Carolina institutions may be getting a limited view of REA in their training, or may even be receiving incorrect information about the approach as teacher educators have little knowledge of the approach.

Further, participants' descriptions of how they used REA in their work suggested they were in various stages in the innovation-decision process (See item #8 of the survey

in Appendix C). As shown in Table 28, it was inferred that about 41% (n=21) of survey participants were in the implementation or confirmation stages because they reported using or including REA or some aspect of it in their work and that they had done so for many years. Further, findings suggested that 19% (n=9) of survey participants were in the early stages of implementation in that they reported they had only recently implemented REA in their work and that 6% (n=3) of participants were in the decision stage as they reported they did not use REA but were actively seeking information about. In addition, 12% (n=6) of survey participants were believed to be in the knowledge stage because they reported they did not know enough about the approach to use or include it much in their work. None of the responses directly reflected the Persuasion stage, but interview data showed that almost all interview participants had formed an opinion about the approach and most described it favorably (n=7). Further, about 22% (n=11) of the survey participants reported they knew about the approach but they did not use or include it in their work. It was assumed that these participants rejected REA and, therefore, could have been in any stage of the innovation-decision process (Rogers, 2003).

Table 28.

Percentage of Participants in Various Stages of the Innovation-Decision Process [a]

Nonadopters (20)			Adopters (31)	
Knowledge 12% (6)	- Persuasion	Decision 6% (3)	Implementation 19% (10)	Confirmation 41% (21)
----------REJECTED----------				
22% (11)				

Note: Percentages were rounded up for all stages except Decision and Implementation to bring total to 100%.

Further, most participants reported they used a variety of activities and strategies to teach about REA in their courses, including lectures, assigned readings, writing, research, or group projects, teacher demonstrations of REA practices (e.g., light and shadow activities), through videos and DVDs, professional workshops, and visits to programs that use REA practices. Forty percent (n=10) of adopters (N=25) reported they used only class discussions and reading assignments to teach about REA, and 32% (n=8) used class discussions and reading assignments along with at least one other strategy, such as showing a video or assigning a journal writing project. Further, 16% (n=4) of survey participants reported students made visits to REA programs or programs that demonstrated one element of REA, and 2% (n=1) reported making plans for a study tour of REA school in Italy. Three participants said their students implemented REA strategies with young children in ECE field experience, but these participants focused mainly on either project work or a single-element of REA, such as documentation, but not both.

Participants who adopted REA for use in their work also reported they included REA in a variety of courses, but how REA was use or the element of REA taught was often predicated on the types of courses participants taught. For instance, participants who reported using documentation noted it was most often featured in a special methods course or in an arts/creative movement course. Most participants reported including REA an ECE curriculum course and merely compared and contrasted REA with other models or approaches rather than teaching or demonstrating REA specifically. These findings suggest that REA is diffusing among teacher educators in South Carolina predominantly as a curriculum model compared and contrasted with other curricula models at this time.

However, because REA is a relatively new approach for many participants, teacher educators in South Carolina may be using more formal instructional strategies, including lecture and textbook readings, because they are still learning about the approach and may expand their use of the approach as they become more knowledgeable and comfortable with the innovation.

Almost as many participants (n=12) reported using a variety of strategies to teach about REA as those who stated they used more formal approach, although few participants reported including visits to REA programs or opportunities to practice REA strategies in ECE field experiences. Obviously, with so few REA programs in the state, it is understandably difficult for teacher educators in South Carolina to include observation and enactment of REA practices in the context and field experiences. Professional development activities that provide teacher educators in South Carolina with information about approach may also help teacher educators better incorporate REA in their work and to expand their repertoire of instructional strategies about REA (Bullard & Bullock, 2002). Interview data showed that teacher educators who did provide opportunities for students to apply specific REA strategies with children most often focused on project work and documentation, but rarely both. The one participant who reported her students did use project work with children in their field experiences also stated she used the Project Approach developed by Katz and Chard (2000) rather than specifically project-based work as described by REA. The other participants who reported including REA in field experiences focused exclusively on using one element of REA, that of documentation, but not project work.

In addition, project work was frequently cited by interview participants as being too difficult to include in their existing courses and too difficult for teacher education students to carry out in authentic ECE settings. However, most exemplary teacher education programs described in the literature provide students with opportunities to enact REA within authentic early childhood contexts as part of their program preparation as a result of collaborating with their on-campus child development centers that also implement REA (Goldhaber, Smith, & Sortino, 1997; Moran, 2002). And yet, most teacher education programs in South Carolina do not have on-campus ECE centers or access to centers that implement REA. Therefore, in order for pre-service students to put REA into practice, greater collaboration between teacher education programs and existing REA programs in the state would be needed

The Rate of Adoption

According to Rogers, time is a key element in understanding and reporting the diffusion process. In this study, participants who adopted REA were asked to identify the number of years they have used REA, although such responses were considered to be only estimates. Findings showed adopters in this study first started using REA in their work from between less than one year to fifteen years, with the majority of adopters reporting they used REA for between one to three years. As shown in Figure 3, both the cumulative and individual adopter frequencies plotted for the last fifteen years show a rising curve in both lines, suggesting a slow but increasing rate of adoption. According to Rogers (2003), successful innovations typically reflect an S-shape curve in line graphs that depict the cumulative frequency of adopters over time. And the frequency distribution of new adopters over the same period of time typically produce a bell-shaped

curve (Rogers, 2003). The cumulative frequency lines in this study (Figure 3) do not reflect an S-shape, which suggest adoption has not yet peeked. It may be that REA is still diffusing among the only the first half of the social system, a group Rogers' called the early majority. The early majority, according to Rogers (2003) is typically wealthier, more educated, more socially connected, more innovative, and more comfortable with risk than the second half of the social system who adopt later. However, no significant differences were found between adoption groups in this study for variables of annual income, number of professional organizations joined, number of professional conferences attended, years of teaching experience, or levels of education. It may be that adopters and nonadopters alike in this study were both in the early majority and are more alike than different at this point in the diffusion process. A replication of this study some point in the future would help to reveal a truer picture of the diffusion process and possibly point out a leveling off point in the diffusion curve and distinguish the early from the late halves of the social system. Future studies would be needed to describe the movement of REA through the social system by continuing to collect information on the numbers of adopters from this point forward. The S-shaped curve is both innovation and system or population specific and appears only in cases of successful diffusion within a particular system. This data serves as baseline data for gauging the success or failure of REA's diffusion among the target population in this study, and future studies are needed to ultimately may show if REA, like many other innovations, will fail to diffuse. In which case, the adoption curve would show a leveling off and then sharp downward trend as use of the innovation discontinues among teacher educators in South Carolina.

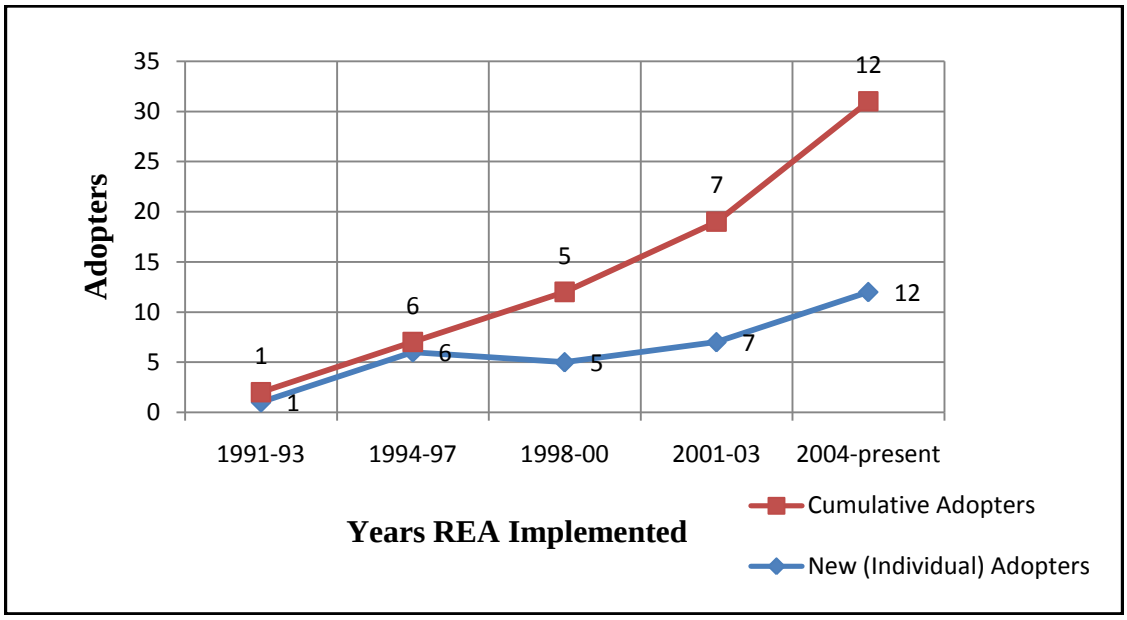

Figure 3.
The Number of New and Cumulative Adopters of REA from 1991-2007

Traits of REA

This study also considered the rate of adoption of REA in relation to participants' perceptions of the relative advantage, compatibility, complexity, observability, and trialability of REA. In addition, participants' motivations for using or not using REA were investigated as part of their perceptions of the traits of REA.

Relative Advantages

Rogers (2003) stated, "Diffusion scholars have found relative advantage to be one of the strongest predictors of an innovation's rate of adoption" (p. 233). Most teacher educators in this study described REA in positive terms and thought there were potential advantages associated with it. Survey data showed that the majority of participants

(25.5%) agreed that REA enhanced the quality of their work and 28% agreed strongly or completely that REA enhanced the quality of their work, whereas only 8% disagreed or completely disagreed that REA enhanced the quality of their work. A greater percentage (40%) of survey participants agreed that REA enhanced the effectiveness of their work, and about 22% agreed strongly or completely with the statement. And a larger percentage (12%) of participants disagreed or completely disagreed with the statement that REA enhanced the effectiveness of their work as compared to the statement that REA enhanced the quality of their work. The majority of those participants who disagreed that REA enhanced the effectiveness of their work were also nonadopters, although one of these respondents was also an adopter. The qualitative data showed that most participants believed REA had advantages and beneficial outcomes for children, including advantages in fostering children's critical thinking and creative abilities, supported children's abilities to question and direct the curriculum, and their abilities to learn in ways that were engaging and appropriate for their age and level of development. Participants also listed many potential benefits for children as a result of using REA, including that REA supported the learning needs of children in poverty, the learning styles of African American children, and that REA had the potential for changing the culture of the classroom as it currently exists. Only one interview participant stated emphatically that she knew REA worked based on her understanding of long-term studies, and only one survey participant wrote that (s)he had seen the success of a "Reggio-type" program. Conversely, qualitative data in this study also showed participants high costs associated with REA in terms of time, effort, and money. And some participants stated other approaches, such as the Program for Infants and Toddlers

(PITC), Montessori, the Project Approach, and the thematic unit approach were more beneficial than REA in terms of compatibility, usefulness, and demonstrated beneficial outcomes for children.

Research evidence may be the missing component needed to better diffuse REA among teacher educators in South Carolina. There is little in the literature pointing to the demonstrated benefits to children using REA. Edwards (2002) argued the need for REA proponents to "measure lasting child-related outcomes and evaluate program quality based on external criteria" (p. 8), suggesting that policy makers in the U.S. would be hesitant to entrust public dollars to any innovation without evidence from research supporting its use. Edwards also stated that REA proponents in Italy have resisted such attempts believing their experiential evidence and process research as demonstrated by children's work and parent surveys are sufficient.

Rogers (2003) explained that objective information about an innovation is of greater importance to the early majority of adopters in a social system, whereas later adopters are more influenced by personal contact with colleagues who have already have experience with the innovation. Communicating evidence from research may provide the impetus for moving REA beyond the textbook in teacher education programs in South Carolina. Evidence from research regarding lasting benefits for young children who experienced REA in the preschool years may also provide the impetus for bringing REA into publically supported ECE settings, as is happening with Montessori and other methods in some school districts in the state (Laurens County School District No. 55, 2005-2006).

Observability

Findings in this study showed participants' perceptions regarding REA's relative advantages were closely related to their perceptions about REA's observability and compatibility. Although some participants reported they had taken study tours and/or visited REA programs in Italy, St. Louis, and South Carolina, most stated they did not perceive the approach to be highly observable as there are too few or no REA programs in their local areas. Interestingly, only about 53% disagreed with the statement that it was difficult for them to see REA being utilized and only 28% of survey participants agreed with the statement, suggesting that, though there are few REA programs in the state, it may be that participants perceive they are able to see REA being used via other sources, such as video and DVD.

Further, findings showed that most participants (66%) said they knew colleagues who used REA in their work, whereas about 25% said they did not know of colleagues who used the approach. Interestingly, about the same proportion of adopters to nonadopters (two to one) reported knowing colleagues who used REA in their work, suggesting colleagues may be an influential factor for adopters. In addition, participants in the open-text data pointed to colleagues who worked in P-12 programs as being an important influence on participants' adoption decisions.

Complexity

According to Rogers, the ease in which an innovation can be communicated can also influence its rate of adoption. REA has been called a complex approach, suggesting it is difficult to communicate and, therefore, difficult to diffuse (Linn, 2001; New, 1999). However, survey results showed that about 45%, agreed with the statement that REA was

easy for them to understand and 61% of disagreed with the statement that learning to use REA in their work was difficult. Not surprisingly, almost one-third, predominantly nonadopters, neither agreed nor disagreed with the latter statement. Likewise, interview data also showed that most participants reported it was easy for them to learn about REA. However, interview participants reported REA was complex and difficult for their students to understand. It would be reasonable to suggest that teacher educators, who have had much training and knowledge in early childhood education, would have little difficulty learning about or understanding REA. However, developing teachers would not have the same amount of background knowledge and learning about REA would be more difficult for them.

Several teacher educators in this study stated they perceived REA was "sophisticated" and "not a beginning place" for most of their students, including graduate students and beginning in-service teachers. Some participants suggested their students' lacked the experience and creativity needed to appreciate REA and surmised that REA was difficult to understand because it was so different from what their students had observed and experienced during their K-12 years. In addition, participants believed their graduate students who were beginning teachers in the state were too constrained by time, overwhelmed by other more pressing duties in the classroom, or lacked the advocacy skills needed to use REA in their ECE programs in public South Carolina schools. Participants stated that they, too, lacked the time they felt they needed to study and understand the approach and that there was little time and room in their courses to include REA in their teacher education programs.

Trialability

Participants were asked about REA's trialability in terms of being able to modify the approach or experiment with it prior to implementation. Survey data showed that about 67% agreed that REA could be modified to fit their needs, and of these respondents, 16% stated they completely agreed that REA could be modified. Only about 5% disagreed with the statement. The other question regarding trialability was aimed at adopters and asked if they believed they had adequate time to experiment with the approach prior to their deciding to use it. Approximately 39% of the respondents to this question disagreed with the statement, and approximately 28% agreed, and almost 30% neither agreed nor disagreed with the statement. Interview data suggested participants believed REA was not only a modifiable approach but that REA needed to be modified in order to make it more relevant and useful for their ECE teacher education students.

Compatibility and Re-invention

Findings from the survey data showed that approximately 80% of the teacher educators in this study agreed that REA fit well with their own personal views and also fit well with their goals for early childhood education; whereas only 4% of the survey respondents disagreed with both statements. Further, about 67% of the survey participants agreed that REA fit well with their institutions' goals for ECE teacher education, whereas 18% disagreed with the statement. Surprisingly, in response to the statement about REA fitting well with South Carolina's goals for ECE teacher education, about 55% of participants agreed with the statement and only 27% disagreed. Open-response and interview data showed that participants considered REA to be highly

incompatible with the current structure of education in South Carolina, but not necessarily incompatible with the state's goals for producing high quality early childhood professionals.

Further, findings showed that participants perceived the incompatibility between REA and the current structure and focus of schools to be one of the greatest barriers to diffusion of REA in the state. Interestingly, participants most frequently mentioned that the child-centered elements of REA, reported as the most compatible with their own values, was the most incompatible with the current structure and focus in education in South Carolina schools. The Project Approach (Katz and Chard, 2000) was frequently referred to as a more compatible version of REA and that teachers had more control over the curriculum using the Project Approach and could preplan and embed learning objectives as well as utilize children's project work. It may be that the Project Approach, which one participant referred to as an "Americanized" version of REA, has diffused among teacher educators at a faster rate than REA in South Carolina. Indeed, the Project Approach is used in some South Carolina public school districts in their 4K programs, and training in the approach has become integrated into yearly, in-service professional development training sessions.

Most participants interviewed in this study stated they believed it as was permissible and even beneficial to "pick and choose" among elements of REA that were most useful and applicable to the context of their teaching. This finding seems to be supported by participants' perceptions of REA as a testable and modifiable innovation. Other participants suggested the "need" to make REA more practical by modifying it or by using only certain elements of the approach which they perceived as more compatible

with current practices. For instance, some stated they perceived the element of documentation was useful because it was a type of authentic assessment similar to the other types of authentic assessment they were already using. Other participants suggested REA was being melded into more traditional ECE approaches already in used teacher education programs in the state. As one interview participant reported about using REA in her teacher education program, "We still want to teach the traditional preschool type of thing, but take it to the next step."

Some participants felt a need to simplify REA in order to make it more practical and accessible to students. Others were conflicted over the matter of adapting or re-inventing REA, stating they thought the entire approach and not just some it should be taught to students and used in ECE classrooms; however, even these participants admitted that they separated out pieces of the approach for use in their own work in teacher education programs. It is understandably difficult for teacher educators who teach only one ECE course to include all the elements of the approach in their work. However, ECE curriculum courses seem to provide students with only an overview of many different models, which limits the amount of instructional time allotted to teaching about REA or any ECE approach. Only one interview participant reported collaborating within her department as well as partnering with the on-campus child development program and a nearby REA program to integrate REA throughout the 2-year ECE teacher education program. However, she also reported she believed it was necessary to simplify REA and merge into what they already were doing to make REA more relevant for ECE majors.

According to Rogers (2003), re-invention is not "necessarily bad" (p. 184). Rather, re-invention can produce better innovations, speed up the rate of adoption, and lead to "a higher degree of sustainability" (p. 183). However, re-invention can also result in an innovation being used incorrectly and in users feeling frustrated when it does not produce the same results as the original innovation, which can lead to discontinuance of the innovation's use, or even in harm or injury. Rogers (2003) cited studies conducted by Berman and McLaughlin (1974, 1975, 1978) who found that when schools re-invented innovations to better to fit the structure of their school, re-invention resulted in schools changing "very little and the innovations substantially" (p. 185).

There has been much discussion in the literature about adapting or re-inventing REA for use in U.S. settings (Katz, 1994; Hendrick, 1997; Cadwell, 1997 & 2002; New, 2000, Linn, 2001; Fu, 2002). Rogers (2003) defined re-invention as "the degree to which an innovation is changed or modified by a user in the process of adoption and implementation" (p. 17). Both Rogers (2003) and Fullan (2001) further explained that re-invention can be viewed from two different adoption perspectives. The first perspective views adoption as the "exact copying or imitating" (p. 180) of an innovation as it was originally devised by developers, which Fullan (2001) termed as the "fidelity" perspective (p. 39). The second perspective views adoption as an "evolutionary" (Fullan, 2001, p. 40) process and purports an innovation is open to change as people use it and "shape it by giving it meaning as they learn by using the new idea" (2003, p. 188). A fidelity perspective would suggest re-invention is any alteration in the principles and practices of REA during implementation, including only partial use of the principles and practices of REA during implementation. However, an evolutionary perspective might

view re-invention as an inevitable by-product of implementation and re-inventing adopters as "active participants in the adoption and diffusion process, [who struggle] to give meaning to the new idea as the innovation is applied to their local context" (Rogers, 2003, p.187).

Recent concerns about the re-invention of REA seem to focus on attempts to use only the most tangible REA practices without also developing an understanding of the philosophical and theoretical ideas anchoring the practices (Cadwell, 1997; Firlik, 1995; Linn, 2001). Katz (1994) warned that "if we implement the Reggio Emilia approach insufficiently or inadequately we might unwittingly and inadvertently give it a bad name, cause doubts about it, and give the impression that it is just a passing fad" (p. 13). Gandini (1993) the U.S. liaison for the dissemination of the Reggio Emilia approach, argued that REA "must be considered as a tightly connected, coherent philosophy in which each point influences and is influenced by others" (p. 5). However, she rejected the fidelity perspective, stating,

> "Educators in Reggio Emilia have no intention of suggesting that their program should be looked at as a model to be copied in another country; rather, their work should be considered as an educational experience that consists of practice and careful reflection that is continuously readjusted." (1993, p. 5)

Fu (2002) also argued that REA is "neither a model nor a program" but is "an approach to teaching and learning" (p. 28) that can inspire teachers to make deep and profound changes in their beliefs and practices. She also stated that "it is critical for us in

reinventing the Reggio Emilia approach to make it our own" (p. 25) emphasizing that the principles of REA must first be implemented with "understanding and thoughtfulness" (p. 28). This kind of re-invention suggested by Fu and others is not merely a simplification of the approach or a modification of its practices in an attempt to make certain elements more compatible with one's context. Instead, re-invention as described by Gandini (1993) and Fu (2002) encourages the development of context-specific practices that are borne out of careful, deliberate study of REA and built from collaboration with others who understand and utilize the approach. As Katz reported (1994) the only authentic REA programs are in Reggio Emilia; all others are re-inventions that have been inspired by REA. REA is unique in that it invites re-invention (Fu, 2002). Indeed, as Hughes discussed in her article about implementing REA in one Head Start program in Alaska, perhaps the greatest benefits of implementing REA is the heightened collaboration and dialogue that happens when ECE professionals "question and…examine the underlying principles of this approach and apply their understanding to their own unique early childhood programs" (p. 53). The emphasis in implementing REA remains on the need for teachers to develop deep levels of understanding of its core principles and practices in collaboration with others who know much about and use the approach themselves.

Barriers to Using REA in South Carolina

Teacher educators in this study cited a number of barriers to using REA in their work. The most frequently mentioned constraint was a lack of time and money to learn more about the approach and a lack of room in coursework for including instruction about REA. Lack of time is commonly cited as a problem among educators involved in educational change (Hendrick, 1997; Fullan, 2001). As Fullan (2001) observed, teachers

are often willing to change but may not have "adequate information, access, time, or energy" to do so (p. 60). Without adequate support in terms of time, money, materials, space, and approval, implementing REA may be too difficult for some teacher educators given the structure of their programs and the current focus on standards and accountability measures in South Carolina schools.

In addition, participants cited barriers associated with the culture and context of South Carolina, believing that a lack of "public will" exists in the state to make young children and quality care a priority. They also pointed to limited economic resources in the state as being a barrier to implementing REA in ECE programs. Others pointed to South Carolina's low minimum education requirements and low pay for early childhood professionals as impeding REA, suggesting that ECE professionals had limited training and few incentives to learn about or utilize REA in their own ECE settings.

Rogers (2003) noted that states can be viewed in much the same way as individual adopters with regard to innovativeness. Some states, such as California, "possess a political culture that is progressive and liberal and have a reputation for being innovative in adopting new laws and programs" (p. 277); whereas other states are generally more skeptical of and less likely to adopt innovations, new policies, or programs. In these less innovative states, more time is needed to implement change. States with greater economic constraints are also, understandably, more resistant to innovation. As Fraser and Gestwicki (200) reported, accountability is often a bigger issue in places where "resources are scarce" (p. 164). Further, according to these authors, ECE programs in less affluent areas tend to respond to accountability demands by making the structures of their organizations more visible and learning outcomes more predictable.

In South Carolina, as in many other states, the need for quality ECE programs is pressing but resources are scare. Much attention has been focused increasing quality in ways that can be standardized across a variety of settings throughout the state. However, REA is not an approach that is highly structured or easily standardized. Subsequently, it may be more difficult to establish REA in ECE programs that are funded by the state and, therefore, less likely to be included in ECE teacher education programs. And yet, the Project Approach, which is similar to REA's emergent curriculum, is being used in some public school 4K programs in state schools, and the South Carolina Department of Social Services, Division of Child Care Services has approved training in the Reggio Emilia approach for licensed child care centers. This evidence suggests that South Carolina is open to REA and to many of the strategies and core principles of the approach.

In summary, findings from this study suggest that REA is diffusing, albeit slowly, among teacher educators teaching in South Carolina teacher education programs. There are signs that REA may continue to diffuse and possibly accelerate as more information about the approach appears in textbooks and in the literature, and as more adopters share their work with colleagues in state conferences and workshops. ECE teacher educators stated they thought REA was highly compatible with their own beliefs and philosophies of education and most stated they thought there were many advantages and potential advantages to using the approach in their work in teacher education programs. If nothing else, many teacher educators in South Carolina see REA as a way of keeping child-centered approaches viable in the eyes of their students even if it is not implementable in ECE programs in the state. And though participants reported that REA was incompatible

with the structure of schools at the present time, most perceived it was nonetheless an important model for developing professionals to know about.

Certain elements of REA seem to be diffusing quickly, such as project work and documentation strategies, but the approach as something other than a curriculum model that is discussed in textbooks is diffusing slowly among teacher educators. Findings from this study suggest the need for more direct contact between SC teacher educators and experts in REA and for more dialogue between teacher educators in the state as a whole. There is a need for teacher educators with experience in implementing REA to share their practices and make their work more visible in South Carolina. This is a tall order as schools of education in South Carolina as there are few ECE teacher educators in the state. Further, most teacher educators in South Carolina carry full teaching loads and oversee field experiences as well as manage numerous other institutional responsibilities. New licensing mandates and assessment system requirements from NAEYC, NCATE, and other state and federal agencies have put profound pressures on teacher educators with regard to the structure of their time and their courses. There seems to be little room, time, or energy for more personal and professional growth and the use of innovations, and even less time for writing and sharing with peers in conferences.

Findings from this study seem to parallel many of Ready's (1992) findings in her case history of the diffusion of New Math from 1958-1974. According to Ready, fears produced by the launching of Sputnik in 1958 led to the general public's call for public schools to pay more attention to "developing intellect not social skills" (p. 7). New Math, according to Ready, was an attempt to respond to these demands and offered many relative advantages over past approaches, including strengthening math reasoning

abilities and making math "fun" for learners. However, Ready noted that Gallop poll information from the time period showed the advantages of New Math touted by educators were not the advantages the general public was looking for. In addition, Ready suggested New Math failed to diffuse because it was difficult for most people, including teachers, to understand it, and because the approach represented a complete overhaul of the educational system, which increased perceptions of its complexity. Professional development and resources to support teachers in implementing New Math, as well as communications about the new methods, were also found to be "inadequate" (p. 12). According to Ready, although New Math was adopted in some areas in the country and diffused across the nation over a 16-year time span, overall, the program failed to be adopted nationwide.

Likewise, Montessori's methods, strongly promoted in the United States in the early twentieth century, failed to diffuse nationally for many of the same reasons New Math failed to diffuse (Wolfe, 2000). According to Wolfe (2000), the rise of the progressive movement was perhaps the largest impediment to the successful diffusion of Montessori's methods. Other factors that prevented the diffusion of Montessori's methods included Montessori's attempts to overly control and franchise the use of her methods, numerous dissension's among Montessori associations, and a lack of training facilities and available trainers to support established Montessori programs (Wolf, 2000).

Although REA seems to be flourishing in some U.S. schools of education, such as the University of Vermont in Burlington, Carnegie Mellon in Pittsburg, and Webster University in St. Louis and has found a place in numerous private child development centers across the nation as well as some publically-funded ECE programs, such San

Francisco's Presidio Child Development Center, the diffusion of REA in South Carolina seems to be less certain. There are only a few established REA programs in the state, and teacher educators perceive REA as incompatible with the current structure of school. Further, there is little evidence from research regarding REA's relative advantages. It is possible that REA may diffuse in teacher education programs in SC only as content information or may be re-invented for use in the state. However, some elements of REA, such as documentation and project work, seem to be diffusing quickly among teacher educators as these elements are more easily integrated into existing teacher education practices and programs in the state.

Study Limitations

The results of this study should be considered in light of the following limitations. First, this study made use of a nonprobability (census) sample rather than a random sample design. The findings were not weighted for non-response bias and it is unclear how much self-selection error was present as a result of the specific content of the survey and the time of year the survey was conducted. Therefore, findings from this study cannot be generalized to other populations.

Second, the survey instrument itself was developed by the researcher based on other published diffusion surveys, but these surveys focused predominately on the diffusion of technology innovations rather than theory-based innovations. There were no validated instruments to guide the researcher in existence in the literature for describing diffusion of a theory-based innovation based on constructs from Rogers' diffusion of innovations theory. Further, the survey instrument was not subjected to test-retest

reliability or other stringent reliability and validity tests and only a small number of participants piloted the instrument prior to conducting the main study.

Conclusions

1. Findings from this study suggest REA is diffusing among teacher educators in South Carolina, but the diffusion process has been and will continue to be a lengthy one. Most of the teacher educators who participated in this study reported they knew about REA, but knowledge varied across adopter groups. In addition, over half (60%) of the participants stated they used or included REA in their work and of these participants, about 32% reported they had only recently started using the approach in their work. Consequently, adoption frequencies pointed to a slow but increasing rate of adoption over the last fifteen years, with the greatest increase in adoption occurring in the last three years.
2. Participants' perceptions of REA based on Rogers' five key attributes also suggests a slow rate of adoption among teacher educators in the state. Adopters in this study stated they perceived several potential advantages of REA, and adopters as well as many nonadopters stated REA was compatible with their own ideas about quality early childhood education. However, adopters and nonadopters perceived REA was highly incompatible with the current focus in school and ECE programs on accountability and standards-based practices. In addition, participants perceived REA's incompatibility was one of the greatest barriers to implementing the innovation in South Carolina. Participants also perceived REA as complex and difficult for pre-service teachers to understand as well as relatively unobservable in that few REA programs exist in the state. Subsequently, adapting or re-inventing

REA for use in South Carolina was perceived as beneficial and perhaps necessary in order for the approach to relevant for teacher education and ECE settings in the state.

3. Findings also showed that participants who adopted REA for use in their work reported they used it mainly as an example or model of ECE curriculum and that instruction focused on comparing and contrasting REA with other curriculum models. There was no indication that most teacher educators perceived a need to implement REA more fully into their existing ECE teacher education programs. The implications of these findings are that REA may continue to diffuse in ECE teacher education in South Carolina because many teacher educators in the state find REA interesting and compatible with their own views about quality early childhood education, but diffusion of the approach may be limited to providing emerging professionals with limited information about REA rather than engaging them more deeply in the principles and practices of REA as part of their clinical or field experiences. Research evidence describing quality outcomes (relative advantages) for young children and prospective teachers resulting from the use of REA may provide the impetus for some teacher educators to gain more knowledge about REA and use REA more fully.
4. Chi-square tests of independence showed no significant differences between adopters and nonadopters in this study in terms of age, annual income, level of education, or other demographic variables, but significant differences were found between adoption groups on variables regarding professional development experiences. Findings in this study showed that adoption was contingent upon attending conferences about REA or taking study tours/visiting REA schools. The implications of these finding are that

decisions to adopt REA are contingent upon conferences and/or opportunities to visit programs utilizing REA. However, professional development in REA in the state was found to be limited, and few participants (2%) in this study reported they had presented information about REA at state ECE conferences and even fewer participants reported authoring publications regarding REA. These findings suggest more professional development is needed, particularly on the state and local levels where greater opportunities for collaboration exist for more localized and isolated teacher educators (Fullan, 2001; Rogers, 2003).

5. Findings also point to knowledge as being an important factor in teacher educators' decisions to adopt or reject REA, although it is unclear how much teacher educators in this study understood the principles and philosophical underpinnings of REA. Prior knowledge of child-centered theories and training in other approaches may have been interfering with teacher educators' understanding of REA and their knowledge of REA may have been a factor influencing their felt needs and reasons for pursuing additional information about the approach. As Entsminger (1995) found in his dissertation study, teachers who reported they understood REA well were often the ones who misinterpreted it the most and, consequently, participated less in professional development in that they failed to recognize their need for more information.
6. Findings also highlighted the need for stronger partnerships between teacher educators and existing REA programs in South Carolina. Teacher educators in this study expressed the need to see and experience REA for themselves in local ECE contexts. These findings support similar recommendations and conclusions drawn

from research regarding the benefits to teachers of participating in learning communities that focus on improving teaching (Cadwell, 2002; Fullan, 2001; Katz, 1994; Watson & Fullan,1992). Teacher educators in other states have reported REA to be an effective approach for helping new teachers in particular learn to be more reflective practitioners, to re-examine their own beliefs about how children learn, and to develop a new image of themselves as teachers—all key skills in learning to teach (Goldhaber & Smith, 2002; Hong & McNair, 2003). Without greater access to REA programs and the support of professional learning communities around REA in South Carolina, the approach may never move out of the textbooks and into the state's early childhood settings. Findings show that there are teacher educators in South Carolina who report having considerable knowledge and training in the approach. These educators may be the change agents who best diffuse the approach through professional networks and through interactions with colleagues around the state. However, time constraints and barriers of proximity as well as constraints imposed by other pressing needs, state and national mandates, and institutional duties are all barriers that need to be overcome for REA to be diffused among personal and professional networks. State and local conferences that include tours of REA programs may be the most efficient channels for building networks at the present time. Teacher educators would need to reach out beyond their own institutions and work together to provide greater access to REA schools in the state and establish organized partnerships to study and establish REA programs and extend future research efforts that expand the knowledge base in the state.

7. Surprising to the researcher was the appearance of various levels of implementation among adopters as well as nonadopters. It appeared throughout the qualitative analysis that implementation of REA in teacher education has yet to be defined. Implementation of REA comprises both changes in behaviors and changes in beliefs that are difficult to define or measure. Rogers defined adoption as "the decision to make full use of an innovation as the best course of action" (2003, p. 21); however, adoption in this study was defined as providing explicit instruction or demonstration in the principles and practice of REA. Neither definition seemed to best describe implementation of REA in the context of teacher education. Fullan (2001) stated implementation of an educational innovation necessitates a significant change in teachers' practices across three dimensions, namely: (1) the possible use of new/revised instructional materials, such as textbooks, technologies, etc., (2) the possible use of new teaching strategies or approaches, and (3) the possible alteration of beliefs or "pedagogical assumptions and theories underlying" the innovation (p. 39). Fullan (2001) also asserted change must occur across all three dimensions in order for implementation of an innovation to occur. He also suggested changes in teachers' practices and beliefs represented the most fundamental changes for sustaining an innovation. The findings from this study showed that some teacher educators included information about REA because they saw REA appearing in their textbooks; however, there was no evidence to suggest they had decided to implement REA any further in their courses. A better definition of implementation of REA by teacher educators is needed as are suggestions for engaging ECE teacher education students with REA in meaningful ways within the university settings.

Further, according to Fullan (2001), it is possible for teachers to say they have adopted an innovation although they have not fully implemented it. Adoption without implementation is demonstrated when teachers make only superficial changes in content, objectives, and structure," (Fullan, 2001, p. 64) rather than significant change in teaching behaviors across all three dimensions of teaching—teaching materials, teaching practices, and teacher beliefs. Implications from these findings suggest the need for further research into the practices of teacher educators with regard to implementation of REA in order to better define and describe implementation and the stages of implementation with regard to the changes in materials, practices, and beliefs that signal implementation of REA in teacher education programs.

Rogers' model of diffusion of innovations theory (2003), though limited in some respects to theory-based innovations, proved nonetheless useful in revealing teacher educators' perceptions about REA and for providing benchmarks for future research to gauge the success or failure of REA's diffusion in South Carolina. It also served to highlight that diffusion is a social activity: teacher learn from other teachers. Finding from this study suggest that without opportunities for teacher educators in South Carolina to learn about REA in the company of other teachers, REA may diffuse in very limited ways in the state. Implementation in isolation runs counter to the core ideas of the REA, which strongly advocates that learning occurs best through collaboration and reflection over time. Teacher educators with knowledge and experience in REA can serve as agents of change and influence peers' decisions to implement REA much more than research evidence alone. And there is a great need in the field for professionals to share their expertise in REA and to expand efforts to diffuse information about the approach, both

the theoretical and the practical insights and to define implementation of REA in teacher education.

Future Research

The objective of this study was to describe the diffusion of REA in ECE teacher education in South Carolina. Findings from this study serve as only a starting point for researchers interested in exploring REA from the perspective of diffusion of innovations theory. Future research can add to the findings and conclusions drawn from this study and add the emerging knowledge base of the field with regard to the use of REA in ECE teacher education. In particular, further research needed to:

1. Expand this study and further investigate the diffusion of REA in states like South Carolina that are also relatively late in adopting REA. Research should inquire into the concerns about REA that are influencing teacher educators' use of the approach in other states. In addition, national, cross-sectional surveys should be used to compare and contrast perceptions of teachers across various contexts, noting common themes and concerns with regard to the use of REA in teacher education and in ECE programs across the United States.
2. Replicate this study but focus on other target populations in South Carolina, particularly preK-3 teachers, in order to describe the diffusion of REA among the ECE community in the state and further ascertain the feasibility of establishing more REA programs here. Researchers should inquire into the knowledge ECE professionals in South Carolina have about REA and what interest there may be for using REA principles and practices in their own work and ECE settings. Further, future research should investigate the communication channels through

which information about REA is diffusing among ECE professionals in the p-12 context and investigate the professional development activities needed to further teachers' understanding of the approach.

3. Survey other teacher educators who have successfully implemented REA to determine the types of professional development activities that have been most helpful in building teacher educators' knowledge of REA and encouraging the development professional learning communities needed to sustain use of the approach.
4. Conduct in-depth interviews and observations of teaching practices with a small sample of teacher educators who have decided to adopt REA in the ECE preparation programs. Future research should also focus on describing changes in the materials, practices, and beliefs that demonstrate implementation of REA in higher education and identify the stages of implementation that can aid future diffusion studies investigating theory-based innovations.
5. Investigate the value of REA in preparing ECE professionals. Future research should also focus on how the use of REA supports the development of ECE professionals in advancing quality programs for young children and describe how REA prepares prospective teachers and caregivers to address the changing needs in the field.
6. In addition, there is a need in the field to describe the relative advantages of REA in terms of program quality and outcomes for young children in the United States. Educators in the U.S. must contend with accountability measures in ways that Italian educators do not. Therefore, REA must prove a value worth the

investment of time and resources. Evidence pointing to positive outcomes for young children in REA programs in terms of development of the personal, social, and language skills is needed to lessen teachers' uncertainties regarding incompatibility of REA with the formal, standards-based approaches utilized in U.S. schools at the present time.

For now, it seems emerging ECE professional in teacher education programs in South Carolina may view REA as only a model of curriculum used in other places in the world. Without systematic efforts to support diffusion through information dissemination as well as greater collaboration between school of education and established REA programs, REA may never move from off the pages of college textbooks and into ECE settings in South Carolina.

APPENDICES

Appendix A

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Appendix B

Institutional Review Board Approval Letter

CLEMSON
UNIVERSITY

March 13, 2007

Dr. Dolores Stegelin
Eugene T. Moore School of Ed.
401A Tillman Hall
Clemson University
Clemson, SC 29634

SUBJECT: Human Subjects Proposal **#IRB2006-308 entitled "The Diffusion of the Reggio Emilia Approach among Early Childhood Teacher Educators in South Carolina"**

Dear Dr. Stegelin:

The Chair of the Clemson University Institutional Review Board (IRB) validated the proposal identified above using Exempt review procedures and a determination was made on **November 3, 2006 that the proposed activities involving human participants qualify as Exempt from continuing review under Category 2** based on the Federal Regulations. You may begin this study.

Please remember that no change in this research proposal can be initiated without prior review by the IRB. **Any unanticipated problems involving risks to subjects, complications, and/or any adverse events must be reported to the IRB immediately. The Principal Investigator is also responsible for maintaining all applicable protocol records (regardless of media type) for at least three (3) years after completion of the study (i.e., copy of validated protocol, raw data, amendments, correspondence, and other pertinent documents). You are requested to notify the Office of Research Compliance (ORC) if your study is completed or terminated.**

Attached are documents developed by Clemson University regarding the responsibilities of Principal Investigators and Research Team Members. Please be sure these are distributed to all appropriate parties.

Good Luck with your study and please feel free to contact us if you have any questions. Please use the IRB number and title in all communications regarding this study.

Sincerely,
Jean Sherwood for Laura Moll

Laura A. Moll, M.A., CIP
IRB Coordinator
Institutional Review Board

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Appendix C

Survey Instrument

SC ECE Teacher Educator Survey

Section I: The questions in this section ask you about ECE courses you teach and your employing institution.

1. **How many courses in early childhood education do you teach per year (two semesters)?**

- ○ 1 to 3
- ○ 4 to 6
- ○ 7 to 9
- ○ 10 or more
- ○ I do not currently teach ECE courses but have in the recent past.
- ○ I have never taught any ECE courses.

2. **Which early childhood program(s) in your institution require(s) your course(s)?**

Choose all that apply

- ☐ Graduate degree program
- ☐ Bachelor's degree program
- ☐ Associate's degree or CDA program
- ☐ Certificate program
- ☐ Professional development (no degree/certificate offered)
- ☐ Other (please specify) _____

3. **Please describe your employing institution.**

Choose all that apply

- ☐ Private 4-yr college/university
- ☐ Public 4-yr college/university
- ☐ Private technical/community college
- ☐ Public technical/community college
- ☐ Faith-based/religious institution
- ☐ Historically black college/university
- ☐ Research institution (doctoral)
- ☐ Other (please specify) _____

Section II: The questions in this section ask you to describe your knowledge of and professional development experiences with the Reggio Emilia Approach.

4. **Which statement best describes your knowledge of the Reggio Emilia Approach?**

- ○ I have never heard of the Reggio Emilia Approach.
- ○ I am aware of the Reggio Emilia Approach, but know very little about it.
- ○ I know about the Reggio Emilia Approach.
- ○ I am very familiar with the Reggio Emilia Approach.
- ○ I have considerable knowledge about the Reggio Emilia Approach.

5. **How did you first learn about the Reggio Emilia Approach?**

- ○ Book, article, or video
- ○ Conference in South Carolina
- ○ Conference outside of South Carolina
- ○ Colleague in South Carolina
- ○ The Hundred Languages of Children Exhibit
- ○ Visited Reggio-inspired school/teacher
- ○ Coursework
- ○ Other (please specify) _____

6. **Based on your current knowledge, how would you describe or define the Reggio Emilia Approach?**

7. **About how many of the following professional development activities concerning REA have you participated in:**

	none	1-3	4-6	7-9	10 or more
Attended conferences/workshops about REA.	○	○	○	○	○
Completed course about REA.	○	○	○	○	○
Participated in study tours to Reggio Emilia or Reggio-Inspired schools.	○	○	○	○	○
Made presentations about REA at conferences.	○	○	○	○	○
Taught courses about REA.	○	○	○	○	○
Authored publications about REA.	○	○	○	○	○

Section III: Questions in this section ask you to describe how you use or include the Reggio Emilia Approach (REA) in your work in ECE teacher/caregiver education in South Carolina. To use or include REA in your work means to demonstrate or provide explicit instruction about the principles or practices of REA in your courses.

8. **Which statement best describes how you use or include REA in your work?**

- ○ I do not include REA in my work because I do not know much about it.
- ○ I know about REA, but do not include it much or at all in my work.
- ○ I do not use REA in my work, but am actively seeking more information about how to use it.
- ○ I have recently started including REA or some aspect of it in my work.
- ○ I integrate REA or aspects of it throughout my work and have done so for some time.

9. **What originally interested you about REA or prompted you to include it in your work?**

10. **About how many years have you included REA in your work?**

11. **In what type(s) of ECE course(s) do you include REA?**

Check all that apply

- ☐ Child Growth & Development
- ☐ ECE Curriculum
- ☐ Child or Educational Psychology
- ☐ ECE or Content Methods
- ☐ ECE History/Foundations
- ☐ Field Experience/Clinical/Practicum
- ☐ Other (please specify) _____

12. **Please describe how you use or include REA in your work in SC.**

13. **Do you feel some elements of REA are more relevant to your work than other elements?**

- ○ No
- ○ Yes
- ○ I don't know enough about REA to respond.

14. **Please list or describe these relevant elements:**

15. **Do you feel some elements of REA are irrelevant to your work?**

- ◯ No
- ◯ Yes
- ◯ I don't know enough about REA to respond.

16. **Please list or describe these irrelevant elements:**

17. **Have you decided against using REA at this time OR have you discontinued using REA in your work?**

- ◯ Yes
- ◯ No
- ◯ I do not know enough about REA to respond.

18. **If you have decided against using REA or have discontinued using it in your work, what prompted you to do so?**

19. **What, if anything, do you feel is needed to help you better understand or utilize REA in your work?**

Section IV: The questions in this section ask you to describe your level of agreement or disagreement with statements about of the Reggio Emilia Approach.

Please indicate how much you agree or disagree with the following statements.

		Completely Disagree	Strongly Disagree	Disagree	Agree	Strongly Agree	Completely Agree	Neither Agree/Disagree
20.	REA fits well with my personal goals for early childhood education	◯	◯	◯	◯	◯	◯	◯
21.	REA fits well with my personal views about early childhood education	◯	◯	◯	◯	◯	◯	◯
22.	Colleagues I know use REA in their work	◯	◯	◯	◯	◯	◯	◯
23.	REA fits well with my institution's goals for early childhood teacher education	◯	◯	◯	◯	◯	◯	◯
24.	REA fits well with South Carolina's goals for early childhood teacher education	◯	◯	◯	◯	◯	◯	◯
25.	Using REA improves the quality of my work	◯	◯	◯	◯	◯	◯	◯
26.	It is difficult for me to see REA being utilized	◯	◯	◯	◯	◯	◯	◯
27.	Using REA enhances the effectiveness of my work	◯	◯	◯	◯	◯	◯	◯
28.	REA is easy to understand	◯	◯	◯	◯	◯	◯	◯
29.	Before deciding to use REA in my work, I had adequate opportunities to experiment with it	◯	◯	◯	◯	◯	◯	◯
30.	I feel I can modify REA to fit my needs	◯	◯	◯	◯	◯	◯	◯
31.	Learning to use REA in my work was difficult for me	◯	◯	◯	◯	◯	◯	◯

Section V: Questions in this final section ask about your personal characteristics/demographic information.

32. **Are you male or female?**

- ◯ male
- ◯ female

33. **What is your age at your last birthday?**

- ◯ 20 to 29
- ◯ 30 to 39
- ◯ 40 to 49
- ◯ 50 to 59
- ◯ 60 to 69
- ◯ 70 to 79
- ◯ 80 years or older

34. What is your racial/ethnic identity?

- ○ African American
- ○ Asian or Pacific Islander
- ○ Hispanic
- ○ Native American
- ○ White, Non-Hispanic
- ○ Other (please specify) _____

35. What is the highest level of education you have completed?

- ○ Associate's degree
- ○ Bachelor's Degree
- ○ Master's Degree
- ○ Education Specialist
- ○ Doctorate
- ○ Other (please specify) _____

36. What is your current teaching position?

- ○ Full-time teaching faculty
- ○ Part-time teaching faculty
- ○ Other (please specify) _____

37. What is your current title?

- ○ Professor
- ○ Associate or Assistant Professor
- ○ Clinical Faculty
- ○ Adjunct, Itinerant, Lecturer, or Instructor
- ○ Graduate Teaching Assistant
- ○ Faculty not ranked at my institution
- ○ Other (please specify) _____

38. How many professional organizations do you belong to?

39. How many professional conferences do you attend annually?

	0	1	2	3	4	5 or more
State conferences	○	○	○	○	○	○
National conferences	○	○	○	○	○	○
International conferences	○	○	○	○	○	○

40. How many years of teaching experience do you have (pre-K through college)?

41. What is your annual household income (before taxes)

- ○ Less than $25,000
- ○ $25,000 to $40,000
- ○ $40,001 to $60,000
- ○ $60,001 to $80,000
- ○ $80,001 to $100,000
- ○ Over $100,000

Would you be willing to share your thoughts about REA further by participating in brief telephone interview with the researcher?If so, click the link to send your name and email address to the researcher: jhartma@clemson.edu

Appendix D

Alignment of Survey Items with Constructs from

Diffusion of Innovations Theory

Constructs		**Survey Items**
	Item No.	**Personal/Professional Variables**
Innovation-Decision Process	1.	How many courses in early childhood education do you teach per year (two semesters)?
	2.	Which early childhood program(s) require your courses? (check all that apply)
	3.	Your employing institution (check all that apply):
	4.	What is your current title?
	5.	Describe your current teaching position:
	6.	How many years of teaching experience do you have (preK-college)?
	7.	About how many professional organizations do you belong to?
	8.	About how many professional conferences/workshops do you attend per year?
	43.	Your sex
	44.	Your age
	45.	Your racial identity
	46.	Your highest level of education
		Innovation-Decision Process
	17.	Which statement best describes your use of the Reggio Emilia Approach in your work?
Construct		**Items Developed to Measure the Construct**
	Item No.	**Levels of Knowledge, Communication Channels and Professional Development Experiences in REA**
Knowledge about the Innovation and Communication Channels	9.	Which statement best describes your knowledge of the Reggio Emilia Approach?
	10.	How did you first learn about the Reggio Emilia Approach?
	11.	How many conferences/presentations about the Reggio Emilia Approach have you attended?
	12.	How many courses in the Reggio Emilia Approach have you taken?
	13.	How many study tours to Reggio schools have you participated in?

Knowledge about the Innovation and Communication Channels (continued)	14.	How many presentations have you made about the Reggio Emilia approach?
	15.	How many courses specifically about the Reggio Emilia approach have you taught?
	16.	How many publications (articles, books, papers) have you authored about the Reggio Emilia Approach?
	25.	What, if anything, would help you better understand REA or utilize it in your work? (Perceived Attributes)
	Item No.	**Attributes of REA (Scale Items)**
Perceived Attributes of the Innovation (Rate of Adoption)	26.	REA fits well with my personal goals for early childhood teacher education. (Compatibility)
	27.	REA fits well with my personal views about early childhood education. (Compatibility)
	28.	Colleagues at my institution use REA in their work. (Observability)
	29.	REA fits well with my institution's goals for early childhood teacher education. (Compatibility)
	30.	REA fits well with South Carolina's goals for early childhood teacher education. (Compatibility)
	31.	Learning to use REA in my work was difficult for me. (Complexity)
	32.	My institution allows me to use REA in my work if I chose to. (Voluntariness) (not included in main study)*
	33.	Before deciding to use REA in my work, I had adequate opportunities to experiment with it or some aspect(s) of it. (Trialability)
	34.	My institution requires me to use REA in my work. (Voluntariness) (not included in main study)*
	35.	Using REA enhances the effectiveness of my work. (Relative Advantage)
	36.	Using REA improves the quality of my work. (Relative Advantage)
	37.	Colleagues who use REA are more esteemed than those who do not. (Image) (not included in main study)*
	38	The use of REA is a status symbol in my profession. (Image) (not included in main study)*
	39.	I believe REA is easy to understand. (Complexity)
	40.	In my professional network, it is difficult for me to see REA being utilized. (Observability)
	41.	I have seen how colleagues use REA in their work in early childhood teacher/caregiver education. (Observability) (not included in main study)*
	42.	I am able to experiment with REA to make it fit my needs (Trialability).

Construct	Item No.	Items Developed to Measure the Construct
		Stage of Innovation-Decision
Innovation-Decision Process,		**Reasons for Adoption, Rejection, or Discontinuance**
	17.	Which statement best describes your use of the Reggio Emilia Approach in your work? (Adopter categories)
Perceived Attributes & Rate Of Adoption	18.	Please describe how you use REA in your work
	19.	About how many years have you included REA in your work in South Carolina?(Adoption rate)
	20.	In what type(s) of early childhood courses do you include REA?
	21.	If you include REA in your work, what originally prompted you to do so? (Relative Advantage)
(Rate of Adoption & Reinvention of the innovation)	22.	If you have chosen not to include REA in your work or have you discontinued using it, what prompted you to not include or discontinue using REA?
	23.	Are there some elements of REA you feel are more relevant to your work than other elements? (Trialability & Reinvention)
	24	Are there some elements of REA you feel are not relevant to your work? (Trialability & Reinvention)
	25.	What, if anything, would help you better understand REA or utilize it in your work? (Perceived Attributes)

Appendix E

South Carolina Colleges & Universities

Offering Degrees in Early Childhood Education

4-yr Public Institution	**Bachelor's**	**Associate's**	**Graduate**
1. Claflin University	X		
2. Clemson University	X		X
3. Coastal Carolina University	X		
4. College of Charleston	X		
5. Francis Marion	X		X
6. Lander College	X		
7. SC State	X		
8. USC – Columbia	X		X
9. USC – Aiken	X		
10. USC – Beaufort	X		
11. USC – Sumter	X		
12. Winthrop University	X		
4-yr Private Institutions			
13. Anderson University	X		
14. Benedict College	X	X CDS	
15. Bob Jones University	X	X Associates	
16. Charleston Southern Un		X	
17. Benedict College	X		
18. Coker College	X		
19. Columbia College	X		
20. Columbia International U.	X		
21. Converse College	X		
22. Erskine College	X		
23. Furman University			X
24. Morris College	X		
25. Newberry College	X		
26. North Greenville College	X		
27. Presbyterian College	X		
28. Southern Wesleyan	X		
29. Spartanburg Methodist College	X		

2-Yr Public & Private Technical/Community	Degrees/Certificates Offered
30. Aiken Technical	Child Care Management & Child Development
31. Central Carolina Technical College	Associate Degree in Public Service • Major in Early Care and Education Diploma in Public Service • Major in Early Childhood Development Certificate in Early Childhood Development Certificate in Infant and Toddler Care
32. Denmark Technical College (Private)	Certificate Early Childhood Development
33. Florence Darlington Technical College	Certificate Early Childhood Development
34. Forest Jr. College (Private)	AA Business w/specialty in ECE
35. Greenville Technical College	AA child care, Public Service Certificate Early Childhood Development, Child care management, infant-toddler
36. Horry County Technical College	A in child care, Certificate in early childhood development
37. Midlands Technical College	AA early care & education, Certificate in early childhood development
38. Northeastern Technical College	AA elementary Ed; General Technology ECE; certificate in EC Development;
39. Piedmont Technical College	AA Public Service Early Childhood Development; Certificate EC Development, Infant/Toddler
40. Spartanburg Technical College	AA Infant/Toddler, Advanced Child care management, special needs specialty
41. Technical College of the Lowlands	AA early care in education, diploma EC Development
42. Tri County Tech	AA ECE and three certificate options EC Development
43. Trident Technical College	AA Early Care and Education, Diploma Early Childhood Development Certificates: Early Childhood Development , Child Care Management, Infant and Toddler Development, Early Childhood Special Education , School-Age and Youth Development
44. York Technical College	AA ECE certificate programs in EC development, infant/toddler
45. Orangeburg-Calhoun Technical College	AA public service EC development
46. Williamsburg Technical College	AA public service EC development

Appendix F

Initial Notification Letter to Dean/Department Chair E

March 30, 2007

Dear (Dean/Dpt. Chair)

My name is Julie Hartman and I am a doctoral student at Clemson University working with Dr. Dolores Stegelin. As part of my dissertation research, I am conducting a survey study about the diffusion of the Reggio Emilia Approach among early childhood teacher educators in South Carolina. I would like to invite your early childhood faculty to participate in my study.

Around the first week of April, 2007, an invitation to participate along with a link to a digital survey will be sent to your early childhood education faculty via their school email. The survey takes about 20 minutes to complete, and findings will help provide an overall picture of the use of the Reggio Emilia Approach in ECE teacher education in South Carolina. The data collected will be completely confidential, and individuals and programs will not be identified. After data analysis and upon request, a report of the results will be made available to participants. The results of this study may be used for conferences, presentations, and publications, but no individual names or schools will be included in any reports, conference, presentations, or publications. All data will be kept secure.

(Name), would you mind sharing this letter with your early childhood education faculty so they are aware of the upcoming email invitation to participate? Participation in this study is voluntary, and participants may withdraw at any time without penalty. There is no compensation provided for participation.

If you or your faculty should have any questions regarding participant rights and confidentiality, you may contact the Clemson University Office of Research Compliance at 864.656.6460. I am happy to answer all other questions or concerns and have included my contact information below.

Thank you for your help with this matter.

Sincerely,

Julie N. Hartman
Doctoral Candidate, Clemson University
(Contact Information)

Appendix G

Initial Invitation to Participate (Email)

Dear (Participant Name)

As you know, early childhood teacher education programs face increasing demands to prepare a well-qualified early childhood workforce. In order to better meet these demands and identify the direction early childhood teacher/caregiver education is taking in South Carolina, you are invited to participate in a dissertation survey study examining the use of the Reggio Emilia Approach (REA) among early childhood teacher educators in our state. As a valued member of the teacher education community, your participation is needed and can help further our understanding of where early childhood teacher and caregiver education is heading in South Carolina.

Would you be able to help us with this study by completing a brief, online survey requiring about 20 minutes of your time. The survey is easy-to-use and convenient. You can start, stop, and return to the survey as needed. Participation in this study is strictly voluntary. There is no compensation for participation or penalty for nonparticipation, and you may withdraw at any time.

To access the survey, simply click on the provided link or copy and paste the survey URL into your browser (hyperlink)

The survey will remain open until May 9, 2007. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance at 864.656.6460. For all other questions or concerns, please contact the researchers at the email or telephone numbers listed below.

Julie N. Hartman
Doctoral candidate, Clemson University
(864) 244-1369
jhartma@clemson.edu

Dr. Dolores Stegelin
Professor, Clemson University
(864) 656-0327
dstegel@clemson.edu

Appendix H

Pilot Survey Feedback Form

See Section I of the Survey:

1. Please identify any question in this section that was confusing or unclear.
2. Please identify any question in this section you were reluctant to answer or that asked for sensitive information:
3. Were these questions ordered in a logical way?
4. Would you suggest changes be made to any of these (1-8) questions?

See Section II of the Survey:

1. Please identify any question in this section that was confusing or unclear:
2. Please identify any question in this section you were reluctant to answer or that asked for sensitive information:
3. Were these questions ordered in a logical way?
4. Would you suggest changes be made to any of these (14-20) questions?

See Section III of the Survey:

1. Please identify any question in this section that was confusing or unclear:
2. Please identify any question in this section you were reluctant to answer or asked for sensitive information:
3. Were these questions ordered in a logical way?
4. Would you suggest changes be made to any of these (21-31) questions?

See Section IV of the Survey:

1. Please identify any question in this section that was confusing or unclear:
2. Please identify any question in this section you were reluctant to answer or asked for sensitive information:
3. Were these questions ordered in a logical way?
4. Would you suggest changes be made to any of these (21-31) questions?

See Section IV of the Survey:

1. Please identify any question in this section that was confusing or unclear:
2. Please identify any question in this section you were reluctant to answer or asked for sensitive information:
3. Were these questions ordered in a logical way?
4. Would you suggest changes be made to any of these (21-31) questions?
   Other suggestions/comments?

Appendix I

Interview Protocol

The purpose of this study is to investigate the diffusion of the REA among teacher educators in South Carolina. I'm interested in knowing what teacher educators in our state know about REA and if they include it in their work and how and why they use it. I am especially interested in getting your input because of your familiarity with early childhood education in your community.

1. First of all, would you tell me about your own background in ECE and your work in your school? (BACKGROUND, PREVIOUS KNOWLEDGE CONNECTION)

2. Would you describe your work (courses you teach) and what programs your courses are part of? (graduate, undergraduate, teacher education, etc.) (PROFESSIONAL EXPERIENCE, USE OF REA)

3. How would you describe your level of knowledge of Reggio? (KNOWLEDGE)

4. How did you first come to learn about the approach? (COMMUNICATION CHANNELS)

5. Did you pursue additional information or professional development in Reggio? (MOTIVATION)

6. What was it about the approach that interested you to pursue more information? (PERCEPTION OF INNOVATION, PREVIOUS KNOWLEDGE CONNECTION)

7. How easy or difficult was it for you to learn about Reggio, to make sense of it? (COMPLEXITY)

8. How do you include the approach in your work? How did you get started integrating it into your work? (USE)

9. Do you feel it's important to include Reggio in your work? Why?/Why not? (RELATIVE ADVANTAGES)

10. How easy or difficult is it for your students to learn about Reggio/to make sense of this approach? (COMPLEXITY)

11. How easy or difficult do you feel it is or will be for graduates to use Reggio or aspects of it in their future work? (COMPLEXITY/COMPATIBILITY)

12. How significant do you feel REA is in early childhood education at the current time? (How well-known? Well-understood? Well used?) (USE, OBSERVABILITY)

13. Do you know of others who use the approach in their work? (OBSERVABILITY)

14. How relevant is this approach to the needs of early childhood education here in South Carolina? (COMPATIBILITY, RELATIVE ADVANTAGES)

15. How compatible is it with the values and goals for early childhood education in SC? Compatible with our goals for teacher education? (COMPATIBILITY)

16. Do you feel that the approach can be adapted to fit the needs of ECE educators? What adaptations have you made? (TRIALABILITY, RE-INVENTION)

17. Are there advantages of using the Reggio approach? Would you say there is a certain level of esteem or status by those who use this innovation? (RELATIVE ADVANTAGES)

18. What advice would you give to ECE teacher educators who are thinking about using the approach? (USE)

19. What, if anything, would be needed to help you use or include REA in your work? (COMMUNICATION CHANNELS/PROFESSIONAL DEVELOPMENT)

20. Is there anything else that you wanted to say about the approach—anything that I didn't ask about?

21. Are there other teacher educators you feel I should talk to about this topic?

Appendix J

Frequency Distribution and Descriptive Statistics

Tables for Scaled Items

Table 29.

Frequency Distribution of REA's Relative Advantages

"REA improves the quality of my work"		Frequency	Percent	Valid Percent	Cumulative Percent
Valid					
	Completely Disagree	1	2.0	2.1	2.1
	Disagree	3	5.9	6.3	8.3
	Agree	13	25.5	27.1	35.4
	Strongly Agree	8	15.7	16.7	52.1
	Completely Agree	6	11.8	12.5	64.6
	Neither Agree/Disagree	17	33.3	35.4	100.0
	Total	48	94.1	100.0	
Missing	System	3	5.9		
Total		51	100.0		

"Using REA enhances the effectiveness of my work"		Frequency	Percent	Valid Percent	Cumulative Percent
Valid					
	Completely Disagree	1	2.0	2.0	2.0
	Disagree	5	9.8	10.2	12.2
	Agree	20	39.2	40.8	53.1
	Strongly Agree	8	15.7	16.3	69.4
	Completely Agree	3	5.9	6.1	75.5
	Neither Agree/Disagree	12	23.5	24.5	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 30.

Descriptive Statistics for REA's Relative Advantages

		Using REA improves the quality of my work	Using REA enhances the effectiveness of my work
N	Valid	48	49
	Missing	3	2
Mean		5.3542	4.8571
Median		5.0000	4.0000
Mode		7.00	4.00
Std. Deviation		1.52273	1.48605
Variance		2.319	2.208
Range		6.00	6.00
Minimum		1.00	1.00
Maximum		7.00	7.00

Table 31.

Frequency Distribution for Compatibility Scale Items

REA fits well with my personal goals for early childhood education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	1	2.0	2.0	2.0
	Disagree	1	2.0	2.0	4.1
	Agree	12	23.5	24.5	28.6
	Strongly Agree	18	35.3	36.7	65.3
	Completely Agree	11	21.6	22.4	87.8
	Neither Agree/Disagree	6	11.8	12.2	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

REA fits well with my personal views about early childhood education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	1	2.0	2.0	2.0
	Disagree	1	2.0	2.0	4.1
	Agree	15	29.4	30.6	34.7
	Strongly Agree	13	25.5	26.5	61.2
	Completely Agree	15	29.4	30.6	91.8
	Neither Agree/Disagree	4	7.8	8.2	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 31, (Continued).

Frequency Distribution for Compatibility Scale Items

REA fits well with South Carolina's goals for early childhood teacher education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	2	3.9	4.2	4.2
	Strongly Disagree	3	5.9	6.3	10.4
	Disagree	9	17.6	18.8	29.2
	Agree	14	27.5	29.2	58.3
	Strongly Agree	11	21.6	22.9	81.3
	Completely Agree	3	5.9	6.3	87.5
	Neither Agree/Disagree	6	11.8	12.5	100.0
	Total	48	94.1	100.0	
Missing	System	3	5.9		
Total		51	100.0		

REA fits well with my institution's goals for early childhood teacher education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	4	7.8	8.2	8.2
	Disagree	5	9.8	10.2	18.4
	Agree	19	37.3	38.8	57.1
	Strongly Agree	9	17.6	18.4	75.5
	Completely Agree	6	11.8	12.2	87.8
	Neither Agree/Disagree	6	11.8	12.2	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 32.

Descriptive Statistics for Compatibility Scale Items

		REA fits well with my personal goals for early childhood education	REA fits well with my personal views about early childhood education	REA fits well with my institution's goals for early childhood teacher education	REA fits well with South Carolina's goals for early childhood teacher education
N	Valid	49	49	49	48
	Missing[a]	2	2	2	3
Mean		5.1020	5.0408	4.4490	4.2917
Median		5.0000	5.0000	4.0000	4.0000
Mode		5.00	4.00(a)	4.00	4.00
Std. Deviation		1.17695	1.17188	1.56872	1.54312
Variance		1.385	1.373	2.461	2.381
Range		6.00	6.00	6.00	6.00
Minimum		1.00	1.00	1.00	1.00
Maximum		7.00	7.00	7.00	7.00

[a] Multiple modes exist. The smallest value is shown.

Table 33.

Frequency Distribution for Complexity Scale Items

REA is easy to understand		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	2	3.9	4.1	4.1
	Strongly Disagree	4	7.8	8.2	12.2
	Disagree	12	23.5	24.5	36.7
	Agree	16	31.4	32.7	69.4
	Strongly Agree	4	7.8	8.2	77.6
	Completely Agree	3	5.9	6.1	83.7
	Neither Agree/Disagree	8	15.7	16.3	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Learning to use REA in my work was difficult for me		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	7	13.7	14.3	14.3
	Strongly Disagree	3	5.9	6.1	20.4
	Disagree	20	39.2	40.8	61.2
	Agree	3	5.9	6.1	67.3
	Neither Agree/Disagree	16	31.4	32.7	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 34.

Descriptive Statistics for Complexity Scale Items

		REA is easy to understand	Learning to use REA in my work was difficult for me
N	Valid	49	49
	Missing	2	2
Mean		4.1633	4.0204
Median		4.0000	3.0000
Mode		4.00	3.00
Std. Deviation		1.66267	2.23131
Variance		2.764	4.979
Range		6.00	6.00
Minimum		1.00	1.00
Maximum		7.00	7.00

Table 35.

Frequency Distribution for Trialability Scale Items

Before deciding to use REA in my work, I had adequate opportunities to experiment with it		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	2	3.9	4.1	4.1
	Strongly Disagree	3	5.9	6.1	10.2
	Disagree	15	29.4	30.6	40.8
	Agree	12	23.5	24.5	65.3
	Strongly Agree	1	2.0	2.0	67.3
	Completely Agree	2	3.9	4.1	71.4
	Neither Agree/Disagree	14	27.5	28.6	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		
I feel I can modify REA to fit my needs		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	1	2.0	2.0	2.0
	Disagree	2	3.9	4.1	6.1
	Agree	23	45.1	46.9	53.1
	Strongly Agree	3	5.9	6.1	59.2
	Completely Agree	8	15.7	16.3	75.5
	Neither Agree/Disagree	12	23.5	24.5	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 36.

Descriptive Statistics for Trialability Scale Items

		Before deciding to use REA in my work, I had adequate opportunities to experiment with it	I feel I can modify REA to fit my needs
N	Valid	49	49
	Missing	2	2
Mean		4.4082	5.0204
Median		4.0000	4.0000
Mode		3.00	4.00
Std. Deviation		1.89207	1.46472
Variance		3.580	2.145
Range		6.00	6.00
Minimum		1.00	1.00
Maximum		7.00	7.00

Table 37.

Frequency Distribution for Observability Scale Items

Colleagues I know use REA in their work		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	1	2.0	2.1	2.1
	Strongly Disagree	1	2.0	2.1	4.2
	Disagree	7	13.7	14.6	18.8
	Agree	23	45.1	47.9	66.7
	Strongly Agree	6	11.8	12.5	79.2
	Completely Agree	5	9.8	10.4	89.6
	Neither Agree/Disagree	5	9.8	10.4	100.0
	Total	48	94.1	100.0	
Missing	System	3	5.9		
Total		51	100.0		
It is difficult for me to see REA being utilized		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Completely Disagree	7	13.7	14.3	14.3
	Strongly Disagree	4	7.8	8.2	22.4
	Disagree	15	29.4	30.6	53.1
	Agree	10	19.6	20.4	73.5
	Strongly agree	2	3.9	4.1	77.6
	Completely agree	2	3.9	4.1	81.6
	Neither Agree/Disagree	9	17.6	18.4	100.0
	Total	49	96.1	100.0	
Missing	System	2	3.9		
Total		51	100.0		

Table 38.

Descriptive Statistics for Observability Scale Items

		Colleagues I know use REA in their work	It is difficult for me to see REA being utilized
N	Valid	49	49
	Missing	2	2
Mean		4.3958	3.7755
Median		4.0000	3.0000
Mode		4.00	3.00
Std. Deviation		1.33272	1.95006
Variance		1.776	3.803
Range		6.00	6.00
Minimum		1.00	1.00
Maximum		7.00	7.00

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